User Manual

HTY Multifunctional scales

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MANUFACTURER OF ELECTRONIC WEIGHING INSTRUMENTS

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1. INTENDED USE

WPY scales are the response for the market demands concerning simplicity of operation and high functionality. They are intended for quick and precise weighing in industrial conditions. They are enclosed in stainless steel casings. They can operate in high humidity and wide temperature range from -10°C to +40°C. TFT 5.7" colour graphic displays with touch panels allows for intuitive operation without using keys.

The standard scales is equipped with USB sockets, RS232 interfaces, Ethernet and digital inputs-outputs 3I/3O. The device can be expanded by connecting 3 additional weighing platforms. Additionally it can work with barcode scanners, receipt printers, label printers, transponder card readers, and some PC equipment (mouse, keyboard, pendrive).

2. PRECAUTIONARY MEASURES

2.1. Precautions

A. Please, read carefully this user manual before and use the device according to its intended use;

B. Weighed loads should be placed in possibly central part of scale pan;

C. Do not clean the device with agents causing corrosion;

D. Weighing pan should be loaded with goods having gross mass lower than maximal capacity of the scale;

E. Do not leave loads on the pan for longer period of time ;

F. In case of failure, immediately disconnect scale power supply;

G. Devices that are to be withdrawn from usage should be utilized according to the law.

2.2. Operation in a strong electrostatic field

If the device is about to operate in a strong electrostatic field (e.g. printing houses etc.) it should be connected to the earthing. Connect it to the clamp terminal signed ⏚.

2.3. Scale washing

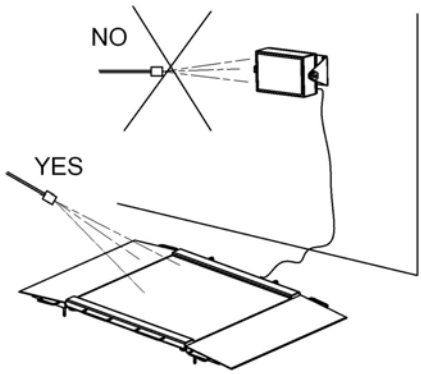
Weighing platforms are made of stainless steel (according to standards PN–0H18N9, EN-1.4301, AISI–304) and silicon elements.

There is an exception, zinc coated overhead scales and painted livestock scales made of mild constructional steel with aluminium cover plate on the platform, polyester overlays and stainless steel or polyamide glands.

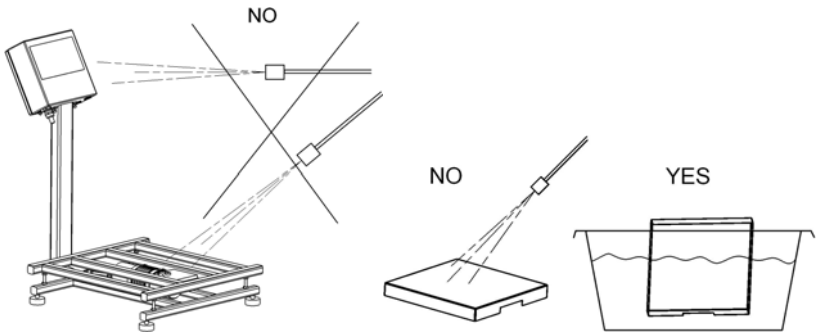
Caution:
Washing and disinfection agents should be matched to the scale.

Platforms of ramp and livestock scales as well as load-bearing structures and weighing tracks of overhead scales can be washed with jet of water (temp. up to +80°C) with an appropriate washing agent. Washing measuring indicators / weighing terminals with the jet of hot water is not allowed.

Caution:
It is advisable to cover measuring indicators/weighing terminals while washing their surrounding with the jet of water.



To wash waterproof platform scales and indicators/terminals neither jet of water nor hot water shall be used, in order not to damage the silicon gaiter that covers the load cell inside the platform and the overlay or glands in the indicator/terminal. To wash pans of platform scales they should be taken off first. Then they can be washed ether with the jet of water or by immersion.



Type:		Water with detergent	Jet of water	Hot water –max 80°C
Ramp scales	Platforms with tracks	yes	yes	yes
	Indicator/terminal	yes	no	no
Livestock scales	Platform with railing	yes	yes	yes
	Indicator/terminal	yes	no	no
Overhead scales	Load bearing structure with he load cell	yes	yes	yes
	Indicator/terminal	yes	no	no
Platform waterproof scales	Platform	yes	no	no
	Indicator/terminal	yes	no	no
	Taken off pan	yes	yes	yes

3. WARRANTY CONDITIONS

A. RADWAG is obliged to repair or change those elements that appears to be faulty because of production and construction reason,

B. Defining defects of unclear origin and outlining methods of elimination can be settled only in participation of a user and the manufacturer representatives,

C. RADWAG does not take any responsibility connected with destructions or losses derives from non-authorized or inappropriate (not adequate to manuals) production or service procedures,

D. Warranty does not cover:

- Mechanical failures caused by inappropriate maintenance of the device or failures of thermal or chemical origin or caused by atmospheric discharge, overvoltage in mains or other random event,
- Inappropriate cleaning.

E. Forfeiture of warranty appears after:

- Access by an unauthorized service,
- Intrusion into mechanical or electronic construction of unauthorized people,
- Installing another operating system,
- Removing or destroying protection stickers.

F. The detailed warranty conditions one can find in warranty certificate.

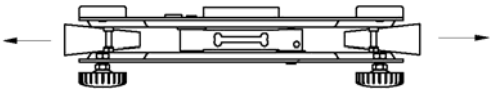
G. Contact with the central authorized service:
+48 48 384 88 00 ext. 106 or 107.

4. UNPACKING AND MOUNTING

A. Take out the device from the original package,

B. Put the scale on an even stiff ground,

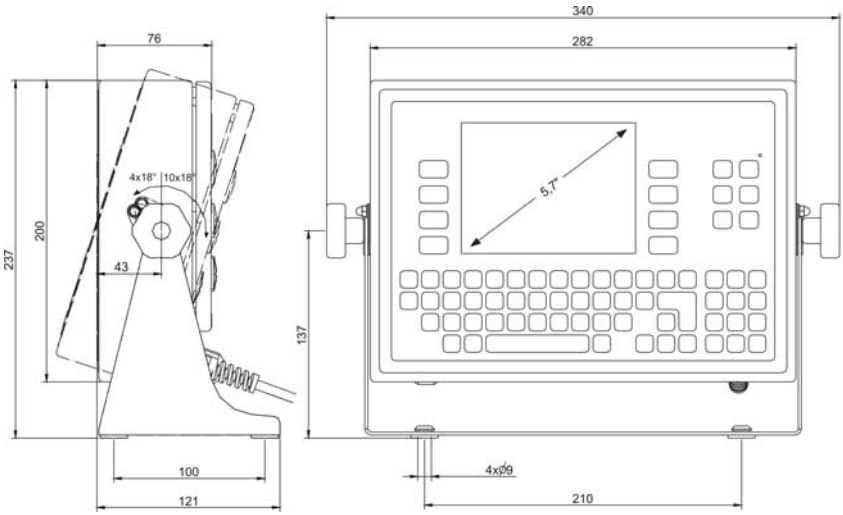
C. Remove transport protection:



D. Scale should be levelled by turning regulation feet. Levelling is correct if air bubble is situated in the central position:

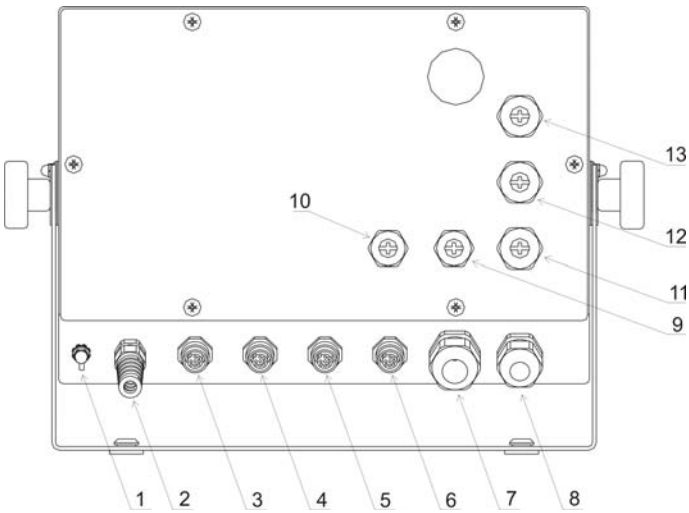
5. SCALE STRUCTURE

5.1. Main dimensions



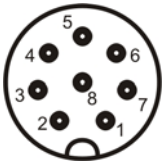
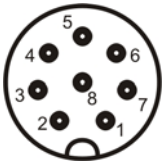
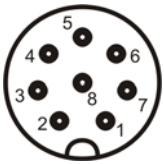
Main dimensions of PUE HY

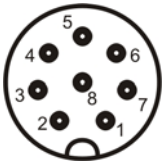
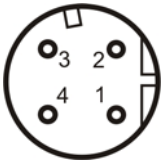
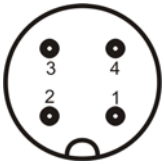
5.2. Description of connectors



1- Earth terminal ground
2- Power cable gland
3- Ethernet connector
4- 3IN/3OUT connector
5- RS232 connector
6- USB connector
7- Gland for optional equipment (8IN/8OUT, etc)
8- Gland for Load cell cable
9- Gland for optional equipment
10- Gland for optional equipment
11- Gland for second load cell cable
12- Gland for 3-thr load cell cable
13- Gland for 4-thr load cell cable

5.3. Sockets descriptions

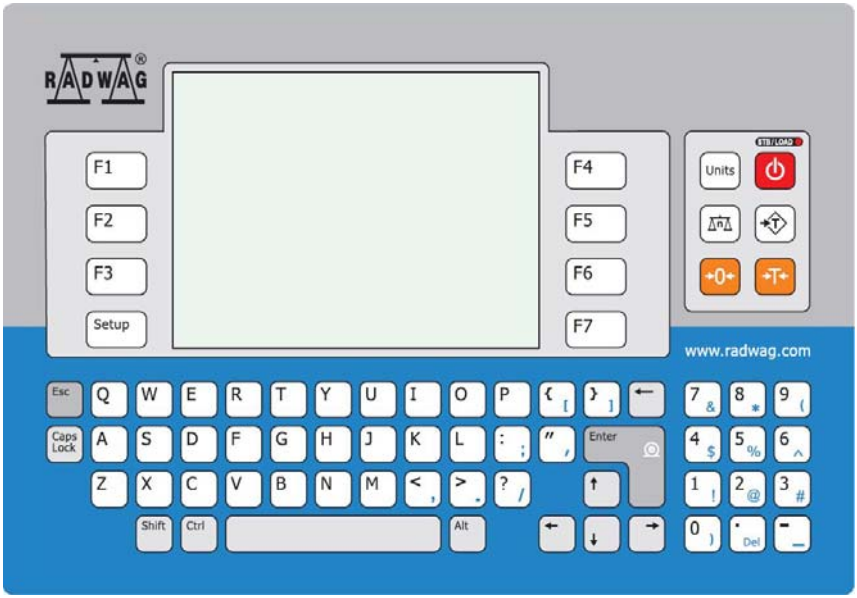
RS232 and optional BUS modules		Pin1 – B Pin2 – RxD Pin3 – TxD Pin4 – A Pin5 – GND Pin6 - +5VDC
Additional RS232		Pin1 – NC Pin2 – RxD Pin3 – TxD Pin4 – NC Pin5 – GND Pin6 - +5VDC
3IN/3OUT		Pin1 – OUT3 Pin2 – OUT2 Pin3 – OUT1 Pin4 – COMM Pin5 – IN3 Pin6 – IN2 Pin7 – IN1 Pin8 – GNDWE

4INPUTS		Pin1 – NC Pin2 – NC Pin3 – NC Pin4 – +24VDC Pin5 – IN3 Pin6 – IN2 Pin7 – IN1 Pin8 – IN4
Ethernet		Pin1 – Rx+ Pin2 – Tx+ Pin3 – Rx- Pin4 – Tx-
USB		Pin1 – Vcc Pin2 – D- Pin3 – D+ Pin4 – GND

6. GETTING STARTED

- After the terminal is connected to power the STB/LOAD diode starts to light.
- Press to start the operating system loading procedure. Windows CE together with RADWAG software loading is signalled by blinking the red diode ON/LOAD.
- When the loading procedure is completed the main software window appears.

7. KEYPAD OVERLAY



8. FUNCTIONS OF KEYS

Key	Description
	Turning on/off the scale
	Toggling between weight units
	Changing active platform
	Inscribing tare value
	Zeroing
	Tarring
	Printing out the result or confirming some entered data

Setup	Function key (entering the menu)
F1	Selecting products (programmable key)
F2	Selecting contractors (programmable key)
F3	Inscribing a tare value (programmable key)
F4	Programmable key (free)
F5	Programmable key (free)
F6	Programmable key (free)
F7	Programmable key (free)

9. PROGRAM STRUCTURE

The main menu has been divided into three functional groups.
In every group there are parameters of similar use.

9.1. Main menu items

The main menu comprises three functional groups:

Parameters

Databases

Info

9.1.1. Parameters

Icon	Description
	Scale
	Working Modes

	Communication
	Devices
	Display
	Inputs / Outputs
	Authorization
	Other
	User Calibration

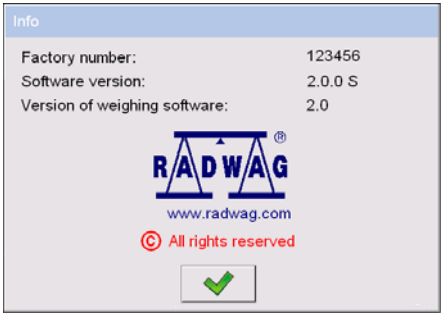
9.1.2. Databases

Icon	Description
	Products
	Operators
	Weighings / Alibi
	Contractors
	Packages
	Warehouses
	Labels
	Universal variables
	Delete older data
	Export database weighings to a file

9.1.3. Info

Submenu <**Info>** is for viewing information:

- Scale factory number,
- Program version,
- Scale program version.



9.2. Inventory of parameters

9.2.1. Scale parameters - weighing

Icon		Description	Value
		Platform 1	-
		Median Filter	0.5
		Filter	Fast
		Autozero	Yes
		LO threshold	0

9.2.2. Working modes

Icon				Description	Value
				Weighing	-
				Save Mode	Manual, each stable
				Down-weighing	No

				Checkweighing	No
				Tare mode	No
				Labelling mode	-
				Number of labels	1
				No. of cumulative labels	1
				No. of CC labels	1
				C label automatic triggering	-
				Mode	None
				Threshold	100
				CC label automatic triggering	-
				Mode	None
				Threshold	100
				Statistics	Global
				Counting pieces	-
				Save Mode	Manual, each stable
				Down-weighing	No
				Checkweighing	No
				Tare mode	No
				Labelling mode	-
				Number of labels	1
				No. of cumulative labels	1
				No. of CC labels	1

				C label automatic triggering	-
				Mode	None
				Threshold	100
				CC label automatic triggering	-
				Mode	None
				Threshold	100
				Statistics	Global
				Automatic correction of reference mass	No
				Deviations	-
				Save Mode	Manual, each stable
				Down-weighing	No
				Checkweighing	No
				Tare mode	No
				Labelling mode	-
				Number of labels	1
				No. of cumulative labels	1
				No. of CC labels	1
				C label automatic triggering	-
				Mode	None
				Threshold	100
				CC label automatic triggering	-
				Mode	None

				Threshold	100
				Statistics	Global

9.2.3. Communication

Icon		Description	Value
		COM1	-
		Baud Rate	9600
		Data bits	8
		Stop bits	1
		Parity	None
		COM2	-
		Baud Rate	9600
		Data bits	8
		Stop bits	1
		Parity	None
		Ethernet	-
		DHCP	No
		IP Address	192.168.0.2
		Subnet mask	255.255.255.0
		Gateway	192.168.0.1
		Tcp	-
		Port	4001

9.2.4. Devices

Icon			Description	Value
			Computer	
			Port	None
			Address	1
			Continuous transmission	No
			Weighing Printout Pattern	-
			E2R System	-
			System is active	No
			Lock selecting products	No
			Printer	-
			Port	COM1
			Code page	1250
			Printouts	-
			Weighing printout pattern	See ch. 16.2.3
			Product printout pattern	See ch. 16.2.3
			Cumulative printout pattern	See ch. 16.2.3
			Cumulative printout pattern for cumulative data	See ch. 16.2.3
			Operator printout pattern	See ch. 16.2.3
			Contractor printout pattern	See ch. 16.2.3
			Warehouse printout pattern	See ch. 16.2.3
			Package printout pattern	See ch. 16.2.3
			CPG report printout pattern (Control of Packaed Goods)	*

			Average tare report printout pattern (Control of Packaed Goods)	*
			Barcode reader	-
			Port	None
			Offset	0
			Code length	0
			Transponder card reader	-
			Port	None
			Additional display	-
			Port	None
			Pattern	See ch. 16.2.3

***)** Not related to **„Standard software”**.

9.2.5. Display

Icon		Description	Value
		Text information	-
		Displaying pattern	See ch. 17.1.1
		Font	Arial
		Font size	Small
		Bold	No
		Actions	
		F1 Button	Choose product
		F2 Button	Choose contractor

		F3 Button	Set tare
		F4 Button	None
		F5 Button	None
		F6 Button	None
		F7 Button	None
		Screen button 1	Local parameters
		Screen button 2	Set MIN and MAX
		Screen button 3	Statistics C: Print
		Screen button 4	CCStatistics : Print
		Screen button 5	C Statistics : Zero
		Screen button 6	Choose package
		Screen button 7	Edit batch number
		Screen button 8	None
		Screen button 9	None
		Set Default	-
		Show all platforms	No
		Bargraph type	None

9.2.6. Inputs / Outputs

Icon		Description	Value
		Inputs	-
		Input 1	None
		Input 2	None

		Input 3	None
		Input 4	None
		Input 5	None
		Input 6	None
		Input 7	None
		Input 8	None
		Input 9	None
		Input 10	None
		Input 11	None
		Input 12	None
		Outputs	-
		Output 1	None
		Output 2	None
		Output 3	None
		Output 4	None
		Output 5	None
		Output 6	None
		Output 7	None
		Output 8	None
		Output 9	None
		Output 10	None
		Output 11	None
		Output 12	None

9.2.7. Authorizations

Icon		Description	Value
		Anonymous operator	Operator
		Date & Time	Administrator
		Printouts	Administrator
		Databases	
		Products	Administrator
		Contractors	Administrator
		Packages	Administrator
		Warehouses	Administrator
		Labels	Administrator
		Delete older data	Advanced Operator

9.2.8. Other

Icon	Description	Value
	Language	Polish
	Date & Time	-
	Beep	Yes
	Touch screen calibration	-

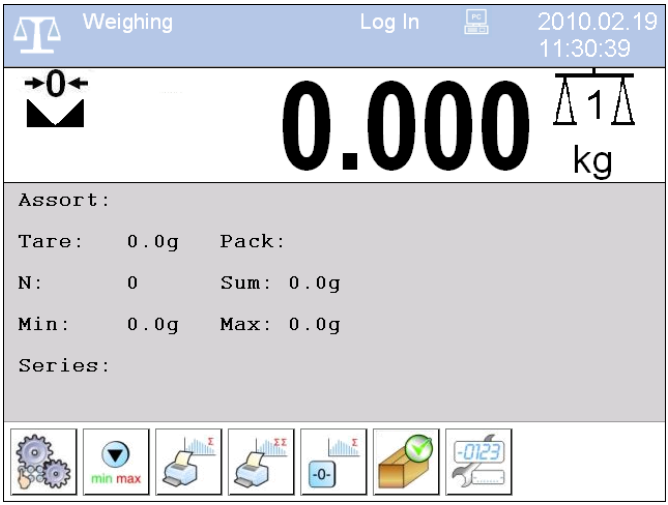
9.2.9. User Calibration

An option only for non-verified scale

Icon		Description	Value
		Platform 1	-
		Setting of start mass	-
		Calibration	-

10. INDICATING WINDOW

Main view:

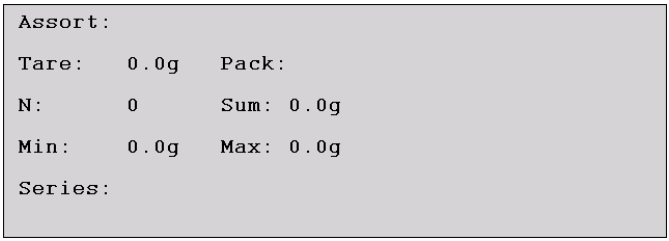


In the main application window one can see four separate parts:

- In the top part of the window there is a status bar where a work mode, logged-in user, time&date are displayed and active connection with a computer are displayed.

- Below the status bar you can see weighing window(s).:

- There is a workspace below this window:



Notice:
The workspace is freely programmable. The default pattern is described in ch. 17.1.1 of this manual.

- There are screen buttons below the workspace:

Notice:

1. *Users can define screen function buttons. See the procedure in ch. 17.2 of this manual;*
2. *The number of buttons to be defined depends on the selected operating mode i.e.:*
    - *In operating mode* ***<Weighing>*** *9buttons are at ones disposal displayed subsequently from 1 to 9 starting from the left side,*
    - *In operating modes:* ***<Counting pieces>*** *or* ***<Deviations>*** *one can define up to 7 screen buttons displayed subsequently from 1 to 7 starting from the left side. Two buttons on the right side are attributed permanently to the modes mentioned above because of the functions that are ascribed to them.*

11. LOGGING ON

In order to have full access to user parameters and databases the user should log on as an **<Administrator>**.

11.1. Logging in procedure

- While in the main window press **<log in>** on the top of the screen and the window with operators attributed to **<Admin>** will appear,
- After entering **<Admin>** a screen keyboard runs with editing window for inscribing a password,
- Type password **„1111”** and confirm by pressing ,
- The program returns to the main window and in the title bar you will see **<Admin>** instead of **<log in>**.

11.2. Logging out procedure

- While in the main applilcation window press the name of a logged in operator in the top bar on the screen to open the database of operators,
- Press logging out button situated in the top bar of the operators' database window:

- The program returns to the main window and in the top bar the operators name is substituted by **<Log in>**.

11.3. Authorization access levels

Weighing software uses four access levels: administrator, advanced operator, operator, none. Every user with any attributed access level can perform weighings and select data from in databases to be used during weighing.

Access to user parameters, databases and working modes depending on the authorization access level attributed:

Operator type	Access level description
None	No access to user parameters. No weighing can be confirmed. Cannot enter the reference mass unit and estimate the reference mase unit by weiging in „Counting Pieces" and „Deviations". No access to <Export the weighing database to a file> in menu <Databases>[2].
Operator	Access to parameters in submenu: <Weighing>, <Display>[1] (excluding the group <Actions>), <Others>[1]. Can start and perform all weighing procedures. Access to <Export the weighing database to a file> in menu <Databases>[2].
Advanced Operator	Access to parameters in submenus: <Weighing>, <Working modes>, <Communication>, <Devices>[1], <Display>[1], <Others>[1]. Can start and perform all weighing procedures. Access to <Export the weighing database to a file> in menu <Databases>[2].
Administrator	Access to all user parameters, functions and databases[2]. Can start and perform all weighing procedures.

1. Authorization level for editing functions:

   - **<** **Printouts>** in submenu **„** **Devices /** **Printer"**,
   - **<** **Sample>** in submenu **„** **Devices /** **Additional display"**,
   - **<** **Displaying pattern>** in submenu **„** **Display /** **Text information"**,
   - **<** **Date and Time>** in submenu **<** **Others>**,

   It can be declared in submenu **<** **Authorizations>**, which is accessable only for users with the **<Administrator>** authorization level (see ch. 19 of this manual).

2. A user logged in as **<Administrator>** in submenu **<Authorizations>** (see ch. 19 of this manual) can change authorization levels for accessing different databases and functions **<Delete older data>**. The exception are database **<Weighings / Alibi>**, that have the status **„Read only”**.

12. NAVIGATING WITHIN THE MENU

Owing to the colour display with the touch panel navigating within the menu is simple and intuitive.

12.1. Buttons

Entering the main menu

Menu list „up”

Menu list „down”

Menu list „top”

Menu list „end”

Scrolling „up-down”

or

Enter (OK)

or

Abort

Add a new item in a database

Disabeling the formerly selected record e.g. logging out the operator

Searching a database according to a date

Searching a database according to a name

Searching a database according to a code

Printing on item from a database

Clearing an editing field

Screen keyboard on / off

Reading a printout pattern from a *.lb file
(active after connecting a pendrive)

Variables for a printout pattern

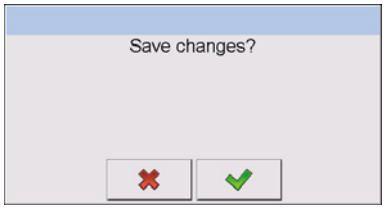
or

One level up

12.2. Return to weighing

The changes introduced are saved for good after they are confirmed. Press or

several times until the following message box appears:



Press: – to confirm changes or – to abort changes. The program returns to weighing.

13. WEIGHING

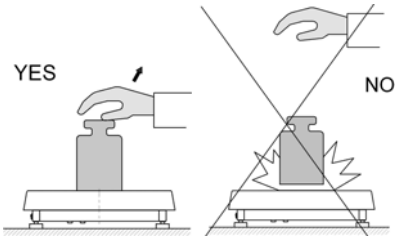
Put a load on the weight pan. When pictogram ◣◢ is displayed the indication is ready to read.

Notice:
A weighing can be saved after stabilising a measurement over zero (pictogram ◣◢).

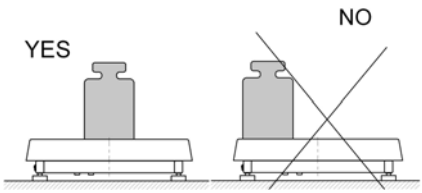
13.1. Conditions of operational use

In order to assure a long term operating period with appropriate measurements following principles should be adhered to:

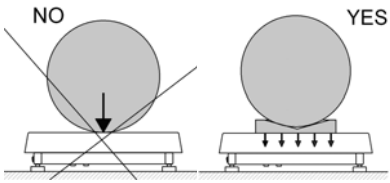
- Avoid applying mechanical shocks to the weight pan:



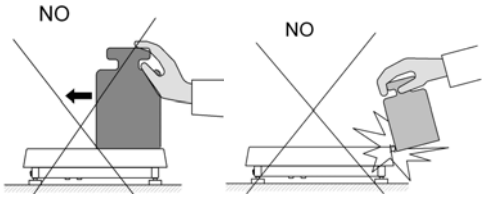
- Loads should be placed in the centre of the pan (eccentric errors are outlined in PN-EN 45501 chapter 3.5 and 3.6.2):



- Do not apply concentrated forces (all load in one point):

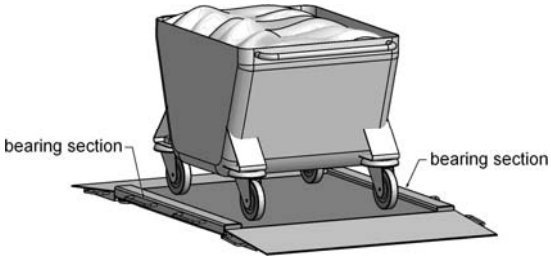


- Avoid side loads, particularly side strokes:



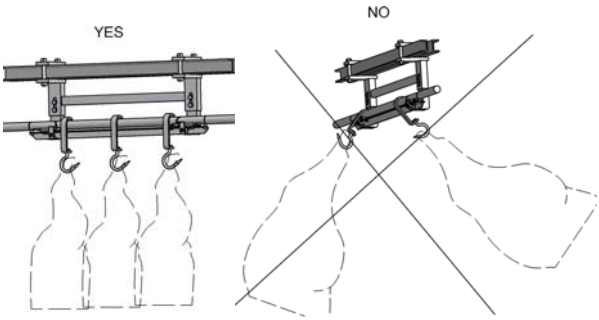
Special line scales should be loaded with intended loads:

- For ramp scales (hand trucks used in meat industry) the platform should be matched to the trucks with maximum weight and the wheels were close to the load-bearing sections:



- For livestock scales – swine, cattle:
  - platforms with low railing for swine,
  - platforms with high railing reinforced connecting links at the top edge.

- For overhead scales (goods hung on hooks) adapted to underslung tracks:
  - Hooks appropriate for the track and scale,
  - Smooth travelling along the load cell without jerks and movements aside,
  - Tensometer (load cell) loaded uniformly.



13.2. Zeroing

In order to zero the indication choose a platform on the touch panel and press →0←. After zeroing is performed the indication is equal zero and following symbols usually appear: →0← and ◣◢.

Zeroing is possible only when the indication is stable.

Notice:
*Zeroing is possible only within **±2%** of full range around zero. If the zeroed value is beyond the interval of **±2%, Err2** is displayed.*

13.3. Tarring

In order to tare the scale choose a platform on the touch panel if necessary, put a package on the pan and press →T←. You will see the indication equal zero and following symbols usually appear: ***Net*** and ◣◢.

After placing a load on the weight pan net mass will be shown. Tarring is possible within the whole range of the scale. After unloading the pan the display shows the tarred value with minus sign.

You can also inscribe tare values to the assortment database. Every product has a field “Tare”. In that case tare is automatically set to this value after selecting the product.

Notice:
*Tarring cannot be performer when a negative or zero value is being displayed. In such case **Err3** appears on the display.*

13.4. Inscribing tare

It is possible to inscribe a tare value.

Procedure:

- While in any work mode press , then the screen keyboard is displayed,
- Inscribe tare and press ,
- The program returns to weighing and the and the display shows the entered value with the **„–”** sign provided there was zero before on the display.

13.5. Weighing for dual range scales

Switching between the **I range** and the **II range** happens automatically (exceeding Max of the **I range**).

Weighings in the second range is signalled by a pictogram in the top left corner of the display →|2|← . Then weighings is done with the accuracy of the **II range** to the moment of returning to zero (autozero range -0-) where the scale switches back to the **I range**.

Switching between the **II range** and **I range** is automatic both in the switching point the autozero zone. While in AUTOZERO – pictogram -0- appears. Then pictogram →|2|← is off and a scale returns to weighing in the **I range**.

13.6. Toggling between weight units

Operators can change the weight unit in two ways:

- Pressing the unit symbol on the screen,
- Pressing formerly defined button **<** kg lb **Change unit>**.

Notice:
The procedure of attributing functions to buttons is described in ch. 17.2 of this manual.

Possible selection:

- gram [g]
- kilogram [kg]
- carat [ct]
- pound [lb]
- ounce [oz]
- Newton [N]

14. SCALE PARAMETERS

Users can set the scale according to the ambient conditions (filtering level) or own needs (autozero) and set the LO threshold for minimum load that enables operation of some functions. This parameters are placed in **<Weighing>**.

In order to enter submenu **<Weighing>,** press Setup and then: **„Parameters / Weighing / Platform 1”**.

Notice:
Weighing parameters are directly related to a specific weighing platform, so at the beginning the weighing platform should be selected for which we want to set parameters.

Inventory of scale parameters:

Median Filter

Filter

Autozero

LO Threshold

14.1. Median filter

The median filter is intended for eliminating short-lasting mechanical shocks.

Procedure:

- Enter **<** **Weighing>** according to ch. 14 of the manual, select **<** **Median Filter>** and then set an appropriate value.

Accessible settings:

None - median filter is off
0.5, 1, 1.5, 2, 2.5 - filtering level to choose

14.2. Filter

This filter is intended to suppress continuous mechanical vibrations at the cost of stabilization time.

Procedure:

- Enter **<** **Weighing>** according to ch. 14 of the manual, select **<** **Filter>** and then set an appropriate value.

Accessible settings:

None, V.Fast, Fast, Average, Slow.

Notice:
The higher filtering level the longer stabilization time.

14.3. Autozero

The autozero function has been implemented in order to assure precise indications. This function controls and corrects **„0”** indication.

While the function is active it compares the results continuously with constant frequency. If two sequentional results differ less than the declared value of autozero range, so the scale will be automatically zeroed and the pictograms and→ **0** ← will be displayed.

If AUTOZERO is disabled zero is not corrected automatically. However, in particular cases, this function can disrupt the measurement process e.g. slow pouring of liquid or powder on the weighing pan. In this case, it is advisable to disable the autozero function.

Procedure:

- Enter <**Weighing>** according to ch. 14 of the manual, select <**Autozero>** and then set an appropriate value.

Accessible settings:

NO	-	Autozero off
YES	-	Autozero on

14.4. Minimum weight for different functions (LO)

Parameter **<LO THRESHOLD>** is associated with automatic weighing. Next weighing will not be saved until the indication goes under the **THRESHOLD LO** (net).

Procedure:

- After entering <**Threshold Lo>** according to ch. 14 of this manual a keyboard is displayed,
- Inscribe LO and confirm by pressing .

15. COMMUNICATION

The scale can communicate with external devices via different ports:

- COM 1 (RS232),
- COM 2 (RS232),
- Ethernet,
- Tcp.

The communication can be configured in parameters' group <**Communication>**.

In order to enter **<Communication>**, press Setup and then:

„Parameters / Communication”.

15.1. RS 232 settings

Procedure:

- Enter **<Communication>** according to ch.15 of the manual, select **<COM1>** or **<COM2>**, and then set an appropriate value.

For RS 232 following parameters are accessible:

- Baud Rate - 4800, 9600, 19200, 38400, 57600, 115200 bit/s
- Data bits - 5, 6, 7, 8
- Stop Bit - No, 1, 1.5, 2
- Parity - No – Odd – Even – Mark – Space

15.2. ETHERNET setting

Procedure:

- Enter **<Communication>** according to ch.15 of the manual, select **<Ethernet>** and then set an appropriate value.

Following settings are accessible for Ethernet:

- DHCP - Yes – No
- IP Address - 192.168.0.2
- Subnet Mask - 255.255.255.0
- Default gateway - 192.168.0.1

Notice:
The settings above are only for information purposes. Transmission parameters should be matched to the local client network.

- After making changes press , then a new message is displayed: **<Restart to apply the changes>**,

- Go back to weighing saving parameters and restart the device.

15.3. TCP protocol setting

TCP *(Transmission Control Protocol)* is a protocol for communication between two computers. It operates in mode client-server. Server awaits on connection iniciation on a specified port while client initiates connection to the server. Scale software allows setting the port for the **„Tcp”** protocol.

Procedure:

- Enter **<** **Communication>** parameter group as described in chapter 16 of the manual,
- Select: **„** **Tcp /** **Port”** then you will see window **<Port>** with the screen keyboard,
- Enter the required number and press .

16. DEVICES

16.1. Computer

The scale can cooperate with a computer. Active connection **scale-computer** is signalled by icon in the top bar of the main window. In submenu **<** **Computer>** some settings needs to be configured for cooperation with computers.

Enter submenu **<** **Computer>**, press Setup and then:
„ **Devices /** **Computer”**.

16.1.1. Computer port

Procedure:

- Enter parameters' group **<** **Devices>** according to ch. 16 of this manual,
- Select **„** **Computer** / **Port”** and then set the appropriate option.

The scale can communicate with a computer via following ports:

- RS 232 (COM1),
- RS 232 (COM2),
- Tcp.

16.1.2. Computer address

Procedure:

- Enter **<** **Devices>** parameter group as described in chapter 16 of the manual,
- Choose **„** **Computer** / **Address”** then the window **<Address>** with the screen keyboard appears,
- Enter the required address and confirm it by pressing .

16.1.3. Continuous transmission

Users can enable continuous transmission from the scale to a computer. Setting parameter **<** **Continuous transmission>** starts subsequent sending data from **<** **Weighing Printout Pattern>** set in submenu: **„Setup /** **Devices /** **Computer /** **Weighing Printout Pattern”**.

Procedure:

- Enter parameters’ group **<** **Devices>** according to ch. 16 of this manual,
- Choose **„** **Computer** / **Continuous transmission”** and then set an appropriate value.

Accessible settings:

No	-	Continuous transmission off
Yes	-	Continuous transmission on

16.1.4. Weighing printout pattern

Users in parameter <**Weighing Printout Pattern>** can define variables included in the printout from the scale to a computer.

Procedure:

- Enter <**Devices>** parameter group as described in chapter 16 of the manual,
- Choose **„Computer** / **Weighing Printout Pattern”** then the editing field **<Weighing Printout Pattern>** with the screen keyboard appears,
- Modify the pattern if necessary and confirm the changes by pressing .

Notice:

There are additional buttons in the bottom line of the screen keyboard. They can be used while modifying a printout pattern.:

Screen keyboard on/off

*Reading a printout pattern from a *.lb file (button active while connecting a USB pendrive)*

List of variables for printout patterns (see the list in APPENDIX A of this manual)

Clear the editing field

16.1.5. Cooperation with „E2R System”

Scales can cooperate with computer software **„E2R System”** that is a modular system for complex production supervising by monitoring of weighings processes. In order to allow the cooperation with **„E2R System”** enable parameter <**E2R System>**.

Notice:

*The parameter <**E2R System>** can be activated by an authorized service or the manufacturer.*

Procedure:

- Enter **<** **Devices>** parameter group as described in chapter 16 of the manual,
- Choose **„** **Computer** / **E2R System** / **E2R System is active”** and then set an appropriate value.

Accessible settings:

No	-	System is not active
Yes	-	System is active

- If during cooperation with **<** **E2R System> product selection lock** is required for operators, go to parameter **<** **Lock selecting products>** and set its value to **<Yes>**.

16.2. Printer

In **<** **Printer>** submenu users can:

- Setting communication with a printer,
- Setting code page of a printer,
- Setting patterns of printouts.

To enter **<** **Printer>**, press Setup and then: **„** **Parameters /** **Devices /** **Printer”**

16.2.1. Printer port

Procedure:

- Enter **<** **Devices>** parameter group as described in chapter 16 of the manual, choose **„** **Printer** / **Port”** and then select an appropriate option.

Printers can be attached to:

- RS 232 (COM1),
- RS 232 (COM2),
- USB,
- Tcp.

16.2.2. Printer code page

Procedure:

- Enter parameters **<** **Devices>** as described in chapter 16 of the manual,
- Choose **„** **Printer /** **Code Page”** then the screen keyboard will be displayed,
- Write the required code page and confirm by pressing .

  Notice:
  The default value is 1250 – code page for Middle-East Europe.

16.2.3. Patterns for printouts

Enter **<** **Printouts>** to define printout patterns.

Procedure:

- Enter parameter group **<** **Devices>** as described in chapter 16 of the manual, then choose **„** **Printer /** **Printouts”**,
- After editing a pattern a memo box with the default content and the screen keyboard,
- Modify the pattern according to your requirements and confirm it by pressing .

Notice:

There are additional buttons in the bottom line of the screen keyboard. They can be used while modifying a printout pattern.:

Screen keyboard on/off

*Reading a printout pattern from a *.lb file (button active while connecting a USB pendrive)*

List of variables for printout patterns (see the list in APPENDIX A of this manual)

Clear the editing field

Default printouts' settings:

Weighing Printout Pattern	{0}
Product Printout Pattern	{50} {51}
Cumulative Printout Pattern	N={15} SUM={16}
Cumulative of Cumulative Printout Pattern	N2={20} SUM2={21}
Operator Printout Pattern	{75} {76}
Contractor Printout Pattern	{85} {86}
Warehouse Printout Pattern	{130} {131}
Package Printout Pattern	{80} {81} {82}
CPG report printout pattern (Control of Packaed Goods)	*
Average tare report printout pattern (Control of Packaed Goods)	*

***)** Not related to **„Standard software"**.

16.3. Barcode scanner

Cooperating with a barcode scanner allows immediate finding of the product in the assortment database the wanted product immediately.

Configuration of communication can be configured in **<** **Barcode reader>**. Users can set the following things:

- Communication port for a barcode scanner,
- Offset setting (a number of characters that are omitted while reading),
- Code length (number of characters that are analysed counting from the offset).

Notice:

In submenu **<*Communication>*** *set the baud rate (default 9600b/sec). The detailed description of cooperation scale – barcode scanner can be found in* ***APPENDIX F*** *in this manual.*

16.3.1. Port for barcode scanner

Procedure:

- Enter **<** **Devices>** according to ch.16 of the manual, choose **„** **Barcode reader** / **Port”** and then set the appropriate value.

Barcode scanners can be connected to:

- RS 232 (COM1),
- RS 232 (COM2),

16.3.2. Offset

It outlines the first character that is significant for searching the assortment database. All preceding characters are skipped.

Procedure:

- Enter **<** **Devices>** according to ch.16 of the manual,
- Choose **„** **Barcode reader** / **Offset”** , then the screen keyboard is displayed,

- Write a new offset and confirm it by pressing .

16.3.3. Code length

Number of characters that is considered while searching the assortment database.

Procedure:

- Enter **<** **Devices>** according to ch.16 of the manual,
- Choose **„** **Barcode Scanner** / **Code Length”** then the screen keyboard is displayed,
- Write a new length and confirm it by pressing .

16.4. Transponder card reader

Selecting operator (logging in) can be done in two ways:

- Typing a password on a keyboard,
- Approaching a transponder card to the reader.
  The card needs to be registerd first.

Notice:

In case of problems with reading transponder cards check the submenu **<** ***Communication>*** *and set appropriate baud rate (default 9600b/s).*

16.4.1. Com port for transponder card readers

Procedure:

- Enter group of parameters **<** **Devices>** according to ch. 16 of this manula, select **„** **Transponder cards reader** / **Port”** and set appropriate option.

The scale can communicate with the reader via following ports:

- RS 232 (COM1),
- RS 232 (COM2).

16.4.2. Procedure of attributing the card number to an operator

To use a transponder card to log on an operator the card needs to be ascribed to the operator in the database of operators.

Procedure:

- Connect the transponder card reader to the required communication port (RS 232 COM1 or RS 232 COM2),
- Choose a communication port for the reader (see ch. 16.4.1 in this manual),
- In submenu **<** **Communication>** set the baud rate to the same as in the reader (default 9600b/s),
- Enter the database of operators and edit the selected operator going to the field **<** **Card Number>**,
- After entering the field **<** **Card Number>** you will see the editing field **<Card Number>** with the screen keyboard,
- Having approached the card to the reader the program automatically displays in editing field **<Card Number>** the number of read card,
- Confirm the number by pressing and return to weighing.

16.5. Additional display

16.5.1. Additional display port

Procedure:

- Enter parameters group **<** **Devices>** according to ch. 16 of this manual, select **„** **Additional display** / **Port”** and then choose an appropriate option from the list.

Communication with additional displays can be performed via following ports:

- RS 232 (COM1),
- RS 232 (COM2),
- Tcp.

16.5.2. Communication protocol frame

HTY scale with following displays:

- WD display,
- WWG display.

To start cooperation of HTY scale with displays go to parameter **<Sample>** and define an appropriate communication protocol.

Procedure:

- Enter parameters' group **<Devices>** according to ch. 16 of this manual,
- Choose **„Additional display** / **Sample"** then the editing field **<Sample>** with the screen keyboard appears,
- Inscribe the required frame pattern using the screen keyboard or choose the it from the list after pressing .

  Specified patterns for displays:

  {141} - Protocol pattern for WD displays
  {142} - Protocol pattern for WWG display

- Confirm the changes by pressing .

Notice:

In default settings parameter ***<Sample>*** *has ascribed* ***{141}*** *(WD display).*

17. DISPLAY

Users can adapt the main display and visible information to their needs. All parameters of the display can be found in the parameters' group **<Display>**.

Entering **<Display>** can be made in two ways:

- Direct pressing in the work area of the main display,
- Pressing Setup and then: **„Parameters / Display"**.

Inventory of parameters of the main display:

- Text information
- Buton functions
- Show all platforms
- Bargraph Type

17.1. Text strings

In **< Text information>** users can set:

- Display pattern
- Screen font
- Font size
- Bold font

17.1.1. Display patterns

The main application window comprises a work area including information that can be freely configured by a user.

Procedure:

- Enter **<** **Display>** according to ch. 17 of this manual,
- Choose: **„** **Text information /** **Displaying pattern”**, then an editing field with prompted value is displayed together with the screen keyboard,
- Modify the pattern if necessary and confirm the changes by pressing .

Notice:

There are additional buttons in the bottom line of the screen keyboard. They can be used while modifying a display pattern. :

Screen keyboard on/off

*Reading a display pattern from a *.lb file (button active while connecting a USB pendrive). *.lb files with the default patterns of display in every language version are accessible on the CD attached to the device*

List of variables for display patterns (see the list in APPENDIX A of this manual)

Clear the editing field

Default display pattern:

```
Assort: {50}
Tare:   {9}{11}    Pack: {80}
N:      {15}       Sum:  {16}{10}
Min:    {12}{10}   Max:  {13}{10}
Series: {14}
```

17.1.2. Screen font

The font type can be changed in the display workspace.

Procedure:

- Enter < **Display>** according to ch. 17 of this manual,
- Choose: **„** **Text information /** **Font”** and set the required font type.

Accessible fonts:

- Arial,
- Courier.

17.1.3. Font size

Setting the font size for the workspace in the display.

Procedure:

- Enter < **Display>** according to ch. 17 of this manual,
- Choose: **„** **Text information /** **Font size** and set the required font size.

Accessible sizes:

- small,
- Average,
- Large.

17.1.4. Bold fonts

Setting bold fonts in an area of the workspace of the display.

Procedure:

- Enter < **Display>** according to ch. 17 of this manual,

- Choose: „ **Text information /** **Bold”** and choose a setting.

Accessible settings:

NO	-	Bold is off
YES	-	Bold is on

17.2. Function keys

In submenu **< Actions>** users can set actions following keys:

F function keys,

? screen keys,

If a button has been attributed a function it has been activated at the same time. If a button or sensor has no ascribed a function in stays inactive.

Procedure:

- Enter **< Display>** according to ch. 17 of this manual,
- Choose **< Buton functions>** and choose a required setting for a choosen button: F1 - F7 or 9 screen buttons.

Notice:
*The list of functions that can be attributed to keys or buttons is listed in **APPENDIX B** of this manual.*

17.3. Displaying platforms

If a scale is equipped with two platforms users can switch between platforms in three ways:

- By pressing the platform number on the scale screen,
- By pressing a formerly defined button **< Change platform>**.

- By activating in parameters all platforms that will be separately placed in the main window of the program. In that case platforms can be activated by pressing the area of this platform.

Notice:
The procedure of attributing functions to buttons is described in ch. 17.2 of this manual.

To activate all platforms press Setup, choose:

„ Parameters / Display / Show all platforms”, and set appropriately.

NO	-	Displaying all platforms disabled
YES	-	Displaying all platforms enabled

17.4. Bargraph type

A bargraph is a typical visualisation procedure. It helps in quick weighing. It requires less concentration to read if a weighing is between minimum and maximum thresholds.

To see the bargraph on the screen enable it in parameters.

Procedure:

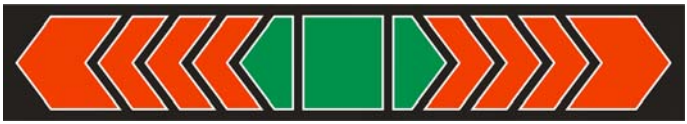
- Enter **<Display>** according to ch. 17 of this manual,
- Choose **<Bargraph type>** and set the required bargraph type.

Accessible bargraphs:

- Quick weighing,
- None (Bargraph is not displayed),
- Signalling checkweighing ranges.

17.4.1. Bargraf “Quick weighing”

- The bargraph consists of 8 red fields and three green fields.



- The green fields signal weighings between MIN and MAX threshold, where:

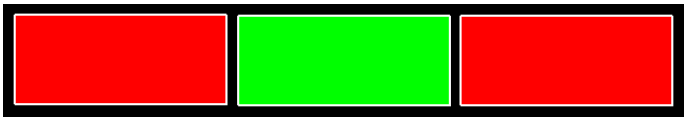
  MIN = the minimum threshold of acceptable weighing - LO
  MAX = the maximum threshold of acceptable weighing - HI

- If a measurement is over the MIN (to the value of 1/3 of MIN-MAX) the green field with a triangle on the left is visible. If the measurement is between 1/3 and 2/3 of MIN-MAX the rectangular green field is visible. If the measurement is between 2/3 of MIN-MAX and MAX a green field with a triangle on the right is visible.
- If the mass value is below the MIN threshold red fields with red arrows on the left are visible. The lower mass value the more red arrows are visible.
- If the mass value is over the MAX threshold red fields with red arrows on the right are visible. The higher mass value the more red arrows are visible.

Thresholds MIN and MAX are on the borders between red and green fields.

17.4.2. Bargraph “Signalling checkweighing ranges”

- This type of bargraph comprises one green and 2 red fields.



- **The left red field –** signals that the load on the pan is lower than the minimum weighing threshold (**Min** threshold);

- **The central green field –** signals that the load on the pan is within the set required interval for the weighed product (**OK** value between **Min** and **Max** thresholds);
- **The right red field –** signals that the load on the pan is greater than the maximum weighing threshold (**Max** threshold).

18. INPUTS / OUTPUTS

HTY scales are equipped STANDARD with 3 inputs / 3 outputs. To adjust software to the users needs configure inputs outputs

in the submenu **<** **Inputs / Outputs>**:

- indicator inputs,
- indicator outputs.

In order to enter submenu **<** **Inputs / Outputs>**, press Setup and then: **„** **Parameters /** **Inputs / Outputs”**.

18.1. Configuration of inputs

Procedure:

- Enter **<** **Inputs / Outputs>** according to ch. 18 of this manual,
- Choose **<** **Inputs>** and enter the selected input you will see a list of functions to ascribe,
- Choose the required function from the list and return to weighing saving the changes according to ch. 12.2 of this manual.

Notice:
*The list of functions to ascribe to inputs are described in **APPENDIX B** of this manual. By default inputs have no ascribed functions **<None>**.*

18.2. Configuration of outputs

Ascribing a function to the output enables the output at the same time.
If an output has no ascribed function it is disabled.

Procedure:

- Enter **<** **Inputs / Outputs>** according to ch. 18 of this manual,
- Choose **<** **Outputs>** and enter the required output, then you will see the list of functions:

None	Output disabled
Stabile	Stable weighing result over LO threshold value
MIN stable	Stable weighing result below the MIN threshold
MIN non-stable	Non-stable weighing result below the MIN threshold
OK stable	Stable weighing result between MIN and MAX thresholds
OK non-stable	Non-stable weighing result between MIN and MAX thresholds
MAX stable	Stable weighing result over the MAX threshold
MAX non-stable	Non-stable weighing result over the MAX threshold
Confirmation of cycle completion *	Signal that confirms that a cycle of dosing has been completed (the defined amount)

***)** Not applicable to **„Standard”** software.

- Choose the required function from the list and return to weighing saving the changes according to ch. 12.2 of this manual.

Notice:
By default all outputs have no function attributed – setting ***<None>****.*

19. AUTHORIZATION

The submenu **<Authorization>** is accessible only while being logged in as the **Administrator**. In this group of parameters access levels can be outlined.

To enter submenu **<Authorization>**, press Setup and then:

„Parameters / Authorization”.

19.1. Anonymous Operator

The program allows to attribute the authorization access level to an operator who does not perform the log-in procedure (anonymous operator).

Procedure:

- Enter **<Authorization>** according to ch. 19 of this manual, choose **<Anonymous Operator>**, and then set the authorization access level.

Accessible authorization levels:

None, Operator, Advanced Operator, Administrator.

19.2. Date and time

Default settings allow a logged-in **Administrator** to change settings of date and time. Software however allows to change the access level to this option: **<Date and time>**.

Procedure:

- Enter parameters' group **<Authorization>** according to ch. 19 of the manual, choose **<Date and time>**, and then set the parameter.

Accessible authorization levels:

None, Operator, Advanced Operator, Administrator.

Notice:
Setting ***<None>*** *allows free access to settings of date and time (without the need of logging in).*

19.3. Printouts

Default settings of the scale allows a logged on **Administrator** to edit printout patterns. Software allows to change the access level to option **<Printouts>**.

Procedure:

- Enter parameter group **<Authorization>** according to ch. 19 of this manual, choose **<Printouts>**, and set appropreately.

Access levels to printouts that can be set:

None, Operator, Advances Operator, Administrator.

Notice:
When you choose setting ***<None>*** *printout patterns can be changed even without logging on.*

19.4. Databases

It is possible to set the access levels to the following databases:

- Database of Products,
- Database of Contractors,
- Database of Packages,
- Database of Warehouses,
- Database of Labels.

Procedure:

- Enter parameters' group **<** **Authorization>** according to ch. 19 of the manual, choose **<** **Databases>**, and then set the parameter.

Accessible authorization levels:

None, Operator, Advanced Operator, Administrator.

Notice:
Setting ***<None>*** *allows free access to settings of date and time (without the need of logging in).*

19.5. Delete older data

Default settings allow a logged-in **Advanced Operator** delete older data from the **<** **Weighings / Alibi>** database. Software however allows to change the access level to this option: **<** **Delete older data>**.

Procedure:

- Enter parameters' group **<** **Authorization>** according to ch. 19 of the manual, choose: **„** **Databases /** **Delete older data"**, and then set the parameter.

Accessible authorization levels:

None, Operator, Advanced Operator, Administrator.

20. OTHER PARAMETERS

There is a group of parameters different from others which influence the operation of the scale. They are gathered in group **<** **Others>** e.g. language, beep etc. To enter **<** **Others>**, press

and then: **„** **Parameters /** **Others"**.

20.1. Languages

Procedure:

- Enter submenu **<** **Others>** according to ch. 20 of this manual, choose **<** **Language>** and set the parameter.

Accessible languages:

- Polish,
- English,
- German,
- French,
- Russian,
- Spanish,
- Czech,
- Hungarian.

20.2. Setting date and time

Users can set date and time that are visible in the main window of the display. Entering the edition of date and time can be made in two ways:

- Pressing the field **„date and time”** in the top bar of the main screen,
- Pressing button

and then: **„** **Parameters /** **Others /** **Date and Time”**.

After entering the setting of date and time the screen keyboard appears. Set year, month, day, hour, minutes and confirm by pressing .

Notice:

Parameter **<** ***Date and Time>** is accessible in the scale menu depending on the authorization access level set in the related parameter.*

20.3. Sound signal

Procedure:

- Enter **Others>** according to ch. 20 of this manual, **Beep>** and set accordingly.

Settings:

NO	-	Beep disabled
YES	-	Beep enabled

20.4. Touch panel calibration

Touch panel calibration is required when inappropriate operation is recognized. E.g. the reaction in a different place than the touching point.

Procedure:

- Enter submenu **Others>** according to ch. 20 of this manual,
- Select **Touch Screen Calibration>** and then an editing field appears,
- Using a thin and soft pointer press (keep pressed for some time) in the point where the cross appears, after indicating the 4th place confirm changes by pressing

21. CUSTOMER CALIBRATION

An option only for non-verified scale

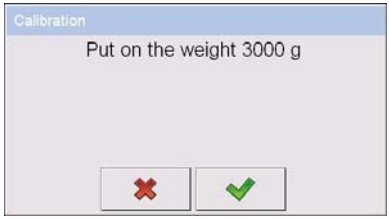
Scales require to recalculate internal divisions to more suitable ones (e.g. g, kg etc.). In order to do this they require a calibration factor. It is adjusted during the calibration procedure using a mass standard. Calibration should be made when weighing a standard mass shows a different mass value.

To enter **<Customer Calibration>**, press Setup and then: **„Parameters / Customer Calibration”**.

21.1. Calibration procedure

- Enter submenu **<Customer Calibration>** according to ch. 21 and select: **“Platform 1 / Calibration”**,
- After entering the parameter the following message box appears:

- Take the load off the pan of platform 1,
- Press button . The following message appears during adjusting start mass: **„Evaluation of starting mass”**,
- After the procedure has been completed the following message box appears:



- Put calibration mass on pan of platform 1 and then select ,

- After the procedure of calibration factor determination following command appears:

- Return to weighing, saving parameters.

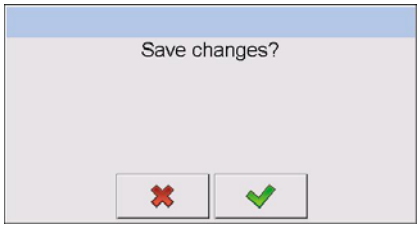
<Setting of start mass> parameter allows to adjust start mass of platform 1.

Notice:
The factory calibration process for platforms 2, 3, 4 is analogical to the one described above.

Return to weighing:

The changes introduced are saved for good after they are confirmed.

Press several times until the following message box appears:



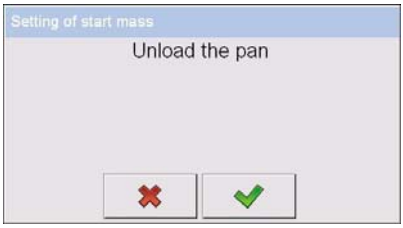
Press: – to confirm changes or – to abort changes. The program returns to weighing.

21.2. Start mass adjustment

It is possible to adjust only a start mass, it helps to correct the start zero when the span does not change.

Procedure:

- Enter submenu **<Customer Calibration>** according to ch. 21 and select: **"Platform 1 / Setting of start mass"**,
- After entering the parameter the following message box appears:



- Take the load off the pan of platform 1,
- Press button . The following message appears during adjusting start mass: **„Evaluation of starting mass"**,
- After the procedure has been completed the following message box appears:

- Return to weighing, saving parameters.

22. SPECIAL FUNCTIONS OF WORKING MODES

HTY scales can operate in following work modes:

Weighing

Counting pieces

Deviations

In settings of different working modes special functions that allows adopting the operation to the customers' needs:

Save Mode

Down-weighing

Checkweighing

Tare mode

Labelling mode

Statistics

Automatic correction of reference mass *

***)** – Function operated only in **<** **Counting pieces>.**

Work modes can be configured in **<** **Working Modes>**.

To enter submenu **<** **Working Modes>**, press Setup

and then: **„** **Parameter /** **Working Modes"**.

Notice:

1. *First left screen button* *(local settings) in the main window of every working mode is ascribed to access settings of current mode.*
2. *The change in on mode results in the same change for other working modes working modes.*

22.1. Recording mode

Depending on setting parameter <**Save Mode>** users can send data from the scale to an external device.

Procedure:

- Enter parameters group <**Working modes>** according to ch. 22 of this manual,
- Enter the required mode and choose <**Save Mode>** then choose the required mode.

Accessible options:

- Manual every stable,
- Manual first stable,
- Automatic first stable,
- Automatic last stable.

22.2. Down-weighing

Software allows to weigh in the “down-weighing” mode. It consist in putting the load on the pan and taking off/removing portions of it with concurrent saving weighings equal to the portions taken off the pan.

Procedure:

- Enter parameters group <**Working Modes>** according to ch. 22 of this manual,
- Enter the required working mode and choose <**Down-weighing>** and then set the required option.

Accessible options:

No	-	Traditional weighing
Yes	-	Down-weighing mode

22.3. Checkweighing

In case of enabling the checkweighing mode, printouts are performed only when a weighing is between **MIN** and **MAX** thresholds that have been defined before.

Procedure:

- Enter parameters group **<** **Working Modes>** according to ch. 22 of this manual,
- Enter the required working mode and choose **<** **Checkweighing>** then set the required option.

Options:

No	-	Every weighing is recorded
Yes	-	Only weighings between MIN, MAX are recorded.

22.4. Tare mode

This function enables users to set parameters for tarring.

Procedure:

- Enter parameters group **<** **Working Modes>** according to ch. 22 of this manual,
- Enter the required working mode and choose **<** **Tare mode>** and then set the required option.

Options:

Single	-	Basic tare mode. The set (chooden) tare value is overwritten after entering a new value
Current sum	-	Summing up tare values of product and package together with manually inscribed tare. After next setting of product or package tare the entered tare value is disabled
Total sum	-	Summing up all subsequently entered tare values
Autotare	-	Automatic tare mode together with mode **<Sum of all>**

22.5. Labelling mode

Labelling mode can be initiated together with every working mode. The labelling system is intended to print labels for marking weighed goods e.g. a packing process. The program can print standard labels for single products, cumulative labels for sticking to bulk containers and cumulative labels for cumulative labels for sticking to the large transport containers holding bulk containers.

In submenu **<** **Labelling mode>** there are accessible following special functions:

Number of labels

No. of cumulative labels

No. of CC labels

C label automatic triggering

CC label automatic triggering

22.5.1. Setting of the number of labels to print

In the parameter **<** **Number of labels>** user defines the amount of labels. They are printed on the printer connected to the weight.

Procedure:

- Enter parameters group **<** **Working Modes>** according to ch. 22 of this manual,
- Enter the required working mode and choose: **„** **Labelling mode /** **Number of labels”** then the editing field **<Number of labels>** with the screen keyboard is opened,
- Choose the required number of labels and confirm by pressing .

22.5.2. Setting of the number of cumulative labels to print

In the parameter **<** **No. of cumulative labels>** define the amount of sum labels. They are printed on connected printer.

Procedure:

- Enter parameters group **<** **Working Modes>** according to ch. 22 of this manual,
- Enter the required working mode and choose: **„** **Labelling mode /** **No. of cumulative labels”**, then the editing field **<No. of cumulative labels>** with the screen keyboard is opened,
- Enter the required number od cumularive labels and confirm by pressing .

22.5.3. Setting of the number of CC labels to print

In the parameter **<** **No. of CC labels>** define the amount of total sum labels to print. They are printed on connected printer.

Procedure:

- Enter parameters group **<** **Working Modes>** according to ch. 22 of this manual,
- Enter the required working mode and choose: **„** **Labelling mode /** **No. of CC labels”**, then the editing field **<No. of CC labels>** with the screen keyboard is opened,
- Enter the required number od cumularive labels and confirm by pressing .

22.5.4. Automatic triggering of cumulative labels

Users have access to the function of automatic triggering of printing cumulative labels after setting parameters **<** **Mode>** and **<** **Threshold>**.

Procedure:

- Enter **<** **Working modes>** parameter group as described in chapter 22 of the manual,
- Enter the required working mode and choose: **„** **Labelling mode /** **C label automatic triggering /** **Mode”** and then set the required option:

  None - Cumulative label printout is initiated by pressing or *,

  Mass - Cumulative label printout is initiated by exceeding the value set in parameter **<** **Threshold>**. The value is treated as the total from single weighings,

  Number - Cumulative label printout is initiated by exceeding the value set in parameter **<** **Threshold>**. The value is treated as the number of single weighings.

***)** Manual printing of cumulative labels can be done in two ways depending on the button used:

Printing followed by zeroing label counter or the total mass

Printing without zeroing label counter or the total mass

By default setting button is accessible in the bottom part of the display but activating the button can be done in submenu: **„** **Parameters /** **Display /** **Actions”** (see ch. 17.2 of the manual).

For automatic printout of cumulative labels counters and total mass variables are always zeroed.

- Confirm the changes by pressing and go to parameter **<** **Threshold>** then **<Threshold>** window appears with the screen keyboard,

- Set the appropriate value for automatic triggering cumulative labels:
  - If parameter **<** 007 **Mode>** is set to **<Mass>** then enter the required value of total mass to exceed in order to print the C label,
  - If parameter **<** 007 **Mode>** is set to **<Number>** use the screen keyboard to enter the required counter value as a threshold to trigger off printing C labels.
- Confirm the changes introduced by pressing .

22.5.5. Automatic triggering cumulative labels of cumulative labels

Users have access to the function of automatic triggering of printing cumulative labels of cumulative labels after setting parameters **<** 007 **Mode>** and **<** PRINT **Threshold>**.

Procedure:

- Enter **<** **Working modes>** parameter group as described in chapter 22 of the manual,
- Enter the required working mode and choose: **„** **Labelling mode /** AUTO **CC label automatic triggering /** 007 **Mode”** and then set the required option:

None - Cumulative label of cumulative labels printout is initiated by pressing or *,

Mass - Cumulative label of cumulative labels printout is initiated by exceeding the value set in parameter **<** PRINT **Threshold>**. The value is treated as the total from single weighings,

Number - Cumulative label of cumulative labels printout is initiated by exceeding the value set in parameter **<** PRINT **Threshold>**. The value is treated as the number of single weighings,

***)** Manual printing of cumulative labels can be done in two ways depending on the button used:

Printing followed by zeroing label counter or the total mass

Printing without zeroing label counter or the total mass

By default setting button is accessible in the bottom part of the display but activating the button can be done in submenu: „ **Parameters /** **Display /** **Actions”** (see ch. 17.2).

For automatic printout cumulative labels of cumulative (CC) labels counters and total mass variables are always zeroed.

- Confirm the changes by pressing and go to parameter <**Threshold>** then **<Threshold>** window appears with the screen keyboard,
- Set the appropriate value for automatic triggering CC labels:
  - If parameter <**Mode>** is set to **<Mass>** then enter the required value of total mass to exceed in order to print the CC label,
  - If parameter <**Mode>** is set to **<Number>** use the screen keyboard to enter the required counter value as a threshold to trigger off printing CC labels.
- Confirm the changes introduced by pressing .

22.6. Statistics

All statistics are continuously updated after each measurement is saved in the scale memory. Statistics can be calculated globally (does not depend on the selected product) or separately for every product from the assortment database. It can be set in parameters <**Statistics>**.

Procedure:

- Enter <**Working modes>** parameter group as described in chapter 22 of the manual,

- Enter the required working mode and choose <**Statistics**> and then set the required option.

Options:

Global - global statistics,
Product - statistics for every product.

Notice:

*In case of operation with <**Statistics**> set to <**Product**> bare in mind that after restarting only statisics of the last weighed product are recovered.*

22.7. Automatic correction of reference mass

It concerns the <Counting pieces> working mode

Working mode <**Counting Pieces**> comprises a special function <SMP **Automatic correction of reference mass**>, that can be used for correcting the unit mass <**SMP**>.

To enable the function in parameters you need to:

- Enter parameter group <**Working modes**> according to ch. 22 of this manual, choose: „**Counting Pieces** / SMP **Automatic correction of reference mass**” and set appropriate option.

Options:

No - Automatic correction of reference mass disabled
Yes - Automatic correction of reference mass enabled

Function <SMP **Automatic correction of reference mass**> in mode <**Counting Pieces**> is enabled at the moment of estimating the sample quantity and signalled by displaying <**PCS**> and <**SMP**> (single piece mass) on the top part of the display.

There are four criteris of working "Automatic correction of reference mass" function:

1. equilibrium should be reached,
2. quantity of pieces should be increased,
3. added quantity of pieces should not be greater than double number of pieces on the pan,
4. the new sample can be different from the old sample by ± 0.3 of pcs (absolute value),

If a user recognises that the sample quantity is adequate the unit mass (single piece mass) can be saved (see ch. 24.5 of this manual) and disable the function by pressing **ENTER/PRINT**.

Notice:
*While the function is active **ENTER/PRINT** changes its functionality. Pressing **ENTER/PRINT** does not result in printing and saving weighings.*

22.8. Minimum reference mass

It concerns the
***<** Counting pieces**>** working mode*

Users before beginning the procedure of single piese mass evaluation can declare **"minimum reference mass"** i.e. minimum total weight of all pieces put on the scale pan expressed in reading divisions.

Procedure:

- Enter parameter group **<** **Working modes>** according to ch. 22 of this manual,
- Choose **„Counting pieces / MIN Minimum reference mass"** and then set an appropriate value.

Accessible settings: 1 d, 2 d, 5 d, 10 d.

Notice:
*While the procedure of evaluation the mass of single piece the the mass of all pieces put on the pan is lower than the value declared in parameter „MIN **Minimum reference mass"**, the following warning message will be displayed: **< Too low sample mass>**.*

23. WORK MODE - WEIGHING

The <**Weighing>** mode is the standard working mode allowing to perform weighings and saving them in the database <**Weighings / Alibi>**.

23.1. Starting the working mode

The <**Weighing>** mode is the standard working mode. If a user has changed the operating mode to another follow the actions below:

- While in the main window press the icon with mode name placed on the top bar on the left then submenu comprising all accessible working modes **<Working Modes>** opens,
- Choose <**Weighing>**, program automatically returns to the main window displaying icon in the top bar.

24. WORKING MODES – COUNTING PIECES

Counting pieces is work mode allowing to count pieces on the basis of the standard unit mass of a single piece set on the scale or fetched from the database.

Notice:
If counting pieces is performed in an additional container it should be tarred.

24.1. Starting the working mode

Procedure:

- While in the main window press in the top bar, then you will see a submenu **<Working Modes>** comprising a list of modes,
- Choose <**Counting Pieces>**, program automatically returns to the main window displaying icon in the top bar,

- The weight unit is automatically changed to **„pcs”** and two screen buttons on the right side appear:

Enter piece mass

Estimate piece mass

24.2. Setting a reference unit by entering known piece mass

Procedure:

- Enter mode **<** **Counting Pieces>** according to ch. 24.1 of this manual,
- Press (enter piece mass), then an editing field is displayed **<Reference Unit>** with the screen keyboard,
- Enter a value and confirm it by pressing , which causes starting **<** **Counting Pieces>** with automatic setting the reference unit.

Notice:

1. *In case of entering a reference unit higher then the maximum weighing range of the main scale the program will display a message box:* ***<Value too high>****,*
2. *In case of entering the single piece mass lower than 0.1 d, the program will display a message box:* ***<Value to small>****.*

24.3. Setting a reference unit by weighing a sample

Procedure:

- Enter mode **<** **Counting Pieces>** according to ch. 24.1 of this manual,
- If pieces are weighed in a container it needs to be put on the pan and tarred,
- Press (estimate piece mass), then the editing field is displayed **<Reference Quantity>** together with the screen keyboard,

- Enter a value and confirm it by pressing , then the following message is displayed: **<Put pieces: xx>** (where **xx** – the value entered before),
- Put the declared quantity of pieces on the pan and when the result is stable (symbol ◣◢) confirm it by pressing .
- The program automatically calculates reference unit mass and causes starting **<Counting Pieces>**.

Notice:

- *The total mass of all pieces put on the weight pan cannot be greater than the weighing range;*
- *The total mass of all pieves put on the weight pan cannot be less than the value declared in parameter **„Minimum reference mass”** (see section 22.8). If the condition above is not fulfilled the scale dispalays the message **<Too low sample mass>**;*
- *The mass of one unit may not be less than **0.1 of reading division** of the scale. If this condition is not fulfilled the scale dispalays the message: **<Too low piece mass>**.*

24.4. Setting the reference mass by entering single piece mass directly to the database

After selecting a product from the assortment database a mass of single piece from the field **<Mass>** is used.

Procedure:

- While in **<Counting Pieces>** press ,
- Using or choose a product and confirm it by pressing .

Notice:
The selected product has to have declared unit mass (single piece mass).

24.5. Inscribing the unit mass to the database

The unit mass can be described a unit mass the following way:

a) Estimate the unit mass (see 24.2 and 24.3),

b) Enter the products database F1,

c) Keep the finger pressed on the required position then a context menu is displayed,

d) Choose option **<Ascribe standard>**, then the standard unit mass is attributed to the product in the field **<Mass>**.

Notice:
Attributing a standard to a selected product is also possible by programmable button. Setting programmable buttons is described in ch. 17.2 of this manual The list of functions is described in ***APPENDIX B*** *of this manual.*

25. WORKING MODES – DEVIATIONS

The program allows to check weighings in deviations (in %) around an outlined standard mass. The standard mass can be outlined by weighing or entering it by a user.

25.1. Starting the operating mode

Procedure:

- While in the main window press in the top bar of the window then you will see a submenu **<Working Modes>** comprising a list of modes,
- Choose mode **<Deviations>**, the program will automatically returns to the main window displaying icon in the top bar,
- The weight unit is automatically changed to **„%”** and two screen buttons on the right side appear:

Enter reference mass

Estimate reference mass

25.2. Reference unit mass estimated by weighing

Procedure:

- Enter **Deviations>** according to ch. 25.1 of this manual,
- If the standard is to be weighed in a container, the container needs to be put on the pan and tarred,
- Press (Estimate standard mass), then a message is displayed: **<Put standard>**,
- Put the load on the pan. After stabilization the result is taken as a standard (symbol ◣◢). Confirm it by pressing ,
- At the same time the weight unit is changed to (w %).

25.3. Rederence unit mass inscribing into the memory

Procedure:

- Enter **Deviations>** according to ch. 25.1 of this manual,
- Press (Give piece mass), then an editing field is displayed **<Give piece mass>** together with the screen keyboard,
- Enter a value and confirm by pressing ,
- At the same time the weight unit is changed to (w %).

26. DATABASES

HTY databases hold different data:

Products

Operators

Weighings / Alibi

Contractors

Packages

Warehouses

Labels

Universal variables

In order to enter <**Databases>**, press Setup and choose <**Databases>**.

26.1. Searching databases

Users can quickly search databases according to the following criteria:

- Name,
- Code.

The quick search according to the criteria above is applicable for databases of: operators, products, contractors, packages, warehouses and labels.

Additionally users can search the weighing database according to <**weighing date>**.

26.1.1. Quick name search

Procedure:

- Enter <**Databases>** according to ch. 26 of the manual,
- Enter <**Products>**,
- Press , then an editing field appears **<Search by name>** with the screen keyboard,
- Inscribe the name of a product or its part and press .
- The program will automatically edit the required product.

26.1.2. Quick code search

Procedure:

- Enter <**Databases>** according to ch. 26 of the manual,
- Enter <**Products>**,
- Press , then an editing field appears **<Search by code>** with the screen keyboard,
- Inscribe the name of a product or its part and press .
- The program will automatically edit the required product.

26.1.3. Weighing date search

Procedure:

- Enter <**Databases>** according to ch. 26 of the manual,
- Enter <**Weighings>**,
- Press , then an editing field appears **<Specify year>** with the screen keyboard,
- Inscribe: year, month, day, hour, minute of weighing and confirm it by pressing .
- The program will automatically display the list of weighings putting at the top the position with the entered date.

26.2. Adding new items in databases

Procedure:

- Enter <**Databases>** according to ch. 26 of this manual,
- Enter database <**Products>**,
- Press , then the message is displayed: **<Create new record?>**,
- Confirm it by pressing , the program automatically enters edition of new record.

Notice:
Adding new records in databases is possible only by logged-in administrators. It does not concern the database of weighings.

26.3. Deleting items in databases

Procedure:

- Enter **<** **Databases>** according to ch. 26 of the manual,
- Enter **<** **Products>**,
- Give a long press to the item, then the context menu is displayed,
- Press **<Delete>**, then a message is displayed:
  <Are you sure you want to delete?>,
- Confirm it by pressing .

Caution:
Deleting records in databases is possible only by logged-in administrators. It does not concern the database of weighings.

26.4. Deleting older data

A user after logging on as **administrator** can delete older position in the database of weinghings **<** **Weighing / Alibi>**.

Caution:
Factory settings prevent users from deleting weighings that are up to one year old. Because of incompatible regulations in different countries concerning the time of protecting data this period can be modified by distributors.

Procedure:

- Enter the submenu **<** **Databases>** according to ch. 26 of the manual,
- Enter **<** **Delete older data>**, then an editing field is displayed **<Give year>** with the screen keyboard,

- Give a date before which data need to be removed and confirm it by pressing ,

  Caution:
  If a user enters a date from the protected period the program displays a message box: ***<Wrong value>****.*

- After entering a date beside protected period the program displays a message box: **<Are you sure you want to delete?>**,
- After it is confirmed by the program will start removing data and after completing it displays the number of deleted records,
- Press to leave.

26.5. Printing items from databases

Users can print any record in databases.

Procedure:

- Enter the submenu **<** **Databases>** according to ch. 26 of the manual,
- Enter **<** **Products>** and press the required item,
- After editing the required record press in the top bar of the display,
- If a printer is connected information about the selected product is printed.

Notice:
Default printout patterns for printing records from different databases are described in ch. 16.2.3 of this manual.

26.6. Export a database to a file

An operator after a series of weighings can export a database to a file using a pendrive.

Procedure:

- Connect a pendrive to USB,

- Enter submenu **<** **Databases>** according to ch. 26 of this manual,
- Enter option **<** **Export database of weighings to a file>**, the program automatically starts saving the database on the pendrive,

Notice:

In case a pendrive is not recognized after entering **<** **Export database of weighings to a file>** *a message is displayed:* ***<Operation failed>****.*

- After the operation has been completed: **„Operation finished successfully”** is displayed together with the file name (with extention *.txt) created on the pendrive,

Notice:
The file name consists of a database name and scale factory number, e.g. ***<Weighings_239800.txt>****.*

- Disconnect the pendrive to USB.

File template:

The created file comprises a table with columns separated by tabulation characters **<Tab>** in case to allow direct export to a spreadsheet **<Excel>**. The table includes all informations about weighings in subsequent columns:

- Date&time,
- Weighing result with unit,
- Tare value with unit,
- Batch number,
- Operator name,
- Contractor name,
- Package name,
- Source warehouse,
- Target warehouse,
- Checkweighing.

26.7. Database edition

The database edition can be performed by an administrator.

26.7.1. Operators' database

Procedure:

- Enter < **Databases>** according to ch. 26 of this manual,
- Enter < **Operators>** and press the required position.

Record of operator:

	Name	Operator name
	Code	Operator code
	Password	Password to log on (max. 16 characters)
	Access level	Authorization access level
	Card number	Transponder card reader for logging on

26.7.2. Database of products

Procedure:

- Enter < **Databases>** according to ch. 26 of this manual,
- Enter < **Products>**and press the required position.

Product record:

	Name	Product name
	Code	Product code
	EAN code	Product barcode
	Mass	Nominal product mass
	Min	Minimum mass for checkweighing

	Max	Maximum mass for checkweighing
	Tare	Tare value (it is preset automatically after selecting a product)
	Price	Unit price
	Number of validity dates	Number of days to calculate expiery date
	Date	Constant product date
	VAT	Value Added Tax in [%]
	Ingredients	Dialogue box for entering ingredients
	Label	Basic label pattern attributed to a product
	C Label	Cumulative label pattern attributed to a product
	CC Label	Cumulative of cumulative label pattern attributed to a product

26.7.3. Database of Weighings / Alibi

Every weighing sent from a scale to a printer or a computer is saved in the database of <**Weighings / Alibi**>. Users can view the data afterwards.

Procedure:

- Enter <**Databases**> according to ch. 26 of this manual,
- Enter <**Weighings / Alibi**> and press the required position.

Weighing record:

	Date	Weighing date
	Mass	Weighing result
	Tare	Tare value
	Product	Product name
	Operator	Operator name
	Contractor	Contractors name
	Batch number	Number of produced batch
	Source warehouse	Source warehouse name
	Target warehouse	Target warehouse name
	Package	Package name
	Checkweighing	A weighing threshold (MIN, OK or MAX)
	Platform number	Platform number to perform weighings

26.7.4. Database of contractors

Procedure:

- Enter **Databases>** according to ch. 26 of this manual,
- Enter **Contractors>** and press the required position.

Contractor record:

	Name	Contractor's name
	Code	Contractor's code
	Tax ID	Contractor's tax ID
	Address	Contractor's address
	Postal code	Contractor's postal code
	City	Town/City of contractor
	Discount	Contractor's discount
	Label	Contractor's label pattern

26.7.5. Database of packages

Procedure:

- Enter < **Databases>** according to ch. 26 of this manual,
- Enter < **Packages>** and press the required position.

Package record:

	Name	Package name
	Code	Package code
	Mass	Package weight (set automatically after choosing after choosing a package from the database)

26.7.6. Database of warehouses

Procedure:

- Enter **Databases>** according to ch. 26 of this manual,
- Enter **Warehouses>** and press the required position.

Warehouse record:

	Name	Warehouse name
	Code	Warehouse code
	Description	Additional warehouse description

26.7.7. Database of labels

The database comprises patterns of labels which users can attribute to products or contractors to operate in labelling mode.

Procedure of editing databases:

- Enter **Databases>** according to ch. 26 of this manual,
- Enter **Labels>** and press the required position.

Label record:

	Name	Label name
	Code	Label code
	Label pattern*	Label printout pattern

***)** *Ways of designing and sending patterns to a scale can be found in **APPENDIX C** of this manual.*

26.7.8. Database of universal variables

The database include patterns of general purpose variables which users can attribute to screen function buttons

in order to enter any alphanumeric text intended to be printed.

Notice:
The procedure of attributing functions to buttons is described in ch. 17.2 of this manual.

Procedure of editing databases:

- Enter **<** **Databases>** according to ch. 26 of this manual,
- Enter **<**

Universal variables> and press the required position.

Universal variable record:

	Code	Universal variable code
	Value to pay	Universal variable value intended to be printed

27. COMMUNICATION PROTOCOL

27.1. General information

A. A character protocol scale-terminal has been designed for communication between RADWAG scales and external devices via RS-232 interface.
B. It consists of commands sent from an external device to the scale and a responses from a scale.
C. Responses are sent every time after receiving a command (reaction for any command).
D. Using commands allows users to receive some information about the state of scale and/or influence the operation e.g.: Requesting weighing results, display control.

27.2. Inventory of RS commands

Commands	Description of commands
Z	Zeroing
T	Tarring
OT	Get tare value
UT	Set tare value
S	Send the stable result in basic unit
SI	Send the result immediately in basic unit
SIA	Send immediate results from all platforms in basic units
SU	Send the stable result in current unit
SUI	Send the result immediately in current unit
C1	Switch on continuous transmission in basic unit
C0	Switch off continuous transmission in basic unit
CU1	Switch on continuous transmission in current unit
CU0	Switch off continuous transmission in current unit
DH	Set lower threshold
UH	Set upper threshold
ODH	Read lower threshold
OUH	Read upper threshold
PC	Send all implemented commands

Notice:

1. *Each command have to be terminated in CR LF;*
2. *The best Policy for communication is not sending another command until the former answer has been received.*

27.3. Respond message format

After sending a request message you can receive:

XX_A CR LF	command accepted and in progress
XX_D CR LF	command completed (appears only after XX_A)
XX_I CR LF	command comprehended but cannot be executed

XX _ ^ CR LF	command comprehended but time overflow error appeared
XX _ v CR LF	command comprehended but the indication below the
XX _ OK CR LF	Command done
ES_CR LF	Command not comprehended
XX _ E CR LF	error while executing command – time limit for stable result exceeded (limit time is a descriptive parameter of the scale)

XX - command name
_ - substitutes spaces

27.4. Command's description

27.4.1. Zeroing

Syntax **Z CR LF**

Possible answers:

Z_A CR LF - command accepted and in progress
Z_D CR LF - command completed

Z_A CR LF - command accepted and in progress
Z_^ CR LF - command comprehended but zero range overflow appeared

Z_A CR LF - command accepted and in progress
Z_E CR LF - time limit for stable result exceeded

Z_I CR LF - command comprehended but cannot be executed

27.4.2. Tarring

Syntax: **T CR LF**

Possible answers:

T_A CR LF - command accepted and in progress
T_D CR LF - command completed

T_A CR LF - command accepted and in progress
T_v CR LF - command comprehended but tare range overflow appeared

T_A CR LF - command accepted and in progress
T_E CR LF - time limit for stable result exceeded

T_I CR LF - command comprehended but cannot be executed

27.4.3. Get tare value

Syntax: **OT CR LF**

Reply: **OT_TARA CR LF** – command executed

Frame format:

1	2	3	4-12	13	14	15	16	17	18	19
O	T	space	tare	space	unit			space	CR	LF

Tare - 9 characters justified to the right
Unit - 3 characters justified to the left

Notice:
Tare values are always send in calibration unit.

27.4.4. Set tare value

Syntax: **UT_TARE CR LF**, where **TARE** – tare value

Possible replies:

UT_OK CR LF - command completed
UT_I CR LF - command correct, but not accessible at the moment
ES CR LF - command incorrect (e.g. incorrect tare format)

Notice:
Use dots as decimal points in tare values.

27.4.5. Send the stable result in basic unit

Syntax: **S CR LF**

Possible answers:

S_A CR LF - command accepted and in progress
S_E CR LF - time limit for stable result exceeded

S_I CR LF - command comprehended but cannot be executed

S_A CR LF - command accepted and in progress
MASS FRAME - mass value in basic unit is returned

Frame format:

1	2-3	4	5	6	7-15	16	17	18	19	20	21
S	space	stability	space	sign	mass	space	unit			CR	LF

Example:

S CR LF – computer command
S _ A CR LF - command accepted and in progress
S _ _ _ _ - _ _ _ _ _ _ 8 . 5 _ g _ _ CR LF – command done, mass value in basic unit is returned.

27.4.6. Send the result immediately in basic unit

Syntax: **SI CR LF**

Possible answers:

SI_I CR LF - command comprehended but cannot be executed at the moment
MASS FRAME - mass value in basic unit is returned

Frame format:

1	2	3	4	5	6	7-15	16	17	18	19	20	21
S	I	space	stability	space	sign	mass	space	unit			CR	LF

Example:

S I CR LF – computer command
S I _ ? _ _ _ _ _ _ _ 1 8 . 5 _ k g _ CR LF - command done, mass value in basic unit is returned immediately.

27.4.7. Send immediate results from all platforms in basic units

Syntax: **SIA CR LF**

Possible answers:

SIA_I CR LF - command comprehended but cannot be executed at the moment

MASS FRAME „P1" CR LF
MASS FRAME „P2" CR LF - mass values are immediately returned from all platforms in basic units

Frame format with mass from subsequent platforms as indicator reply:

1	2	3	4	5	6	7-15	16	17	18	19	20	21
P	n	space	stability	space	sign	mass	space	unit			CR	LF

n - weighing platform number
mass - 9 characters justified to the right
unit - 3 characters justified to the left

Example:

Let us assume that both platforms are connected to indicator PUE HY.

S I A CR LF – computer command
P 1 _ ? _ _ _ _ _ _ 1 1 8 . 5 _ g _ _ CR LF
P 2 _ _ _ _ _ _ _ _ _ 3 6 . 2 _ k g _ CR LF - command done, mass values from both platforms are returned in basic units

27.4.8. Send the stable result in current unit

Syntax: **SU CR LF**

Possible answers:

SU_A CR LF - command accepted and in progress
SU_E CR LF - timeout while waiting for stable results

SU_I CR LF - command comprehended but cannot be executed

SU_A CR LF - command accepted and in progress
MASS FRAME - mass value in current unit is returned

Frame format:

1	2	3	4	5	6	7-15	16	17	18	19	20	21
S	U	space	stability	space	sign	mass	space	unit			CR	LF

Example:

S U CR LF – computer command
S U _ A CR LF - command accepted and in progress
S U _ _ _ - _ _ 1 7 2 . 1 3 5 _ N _ _ CR LF - command done, mass value in current unit is returned.

27.4.9. Send the result immediately in current unit

Syntax: **SUI CR LF**

Possible answers:

SUI_I CR LF - command comprehended but cannot be executed

MASS FRAME - mass value in current unit is returned immediately

Frame format:

1	2	3	4	5	6	7-15	16	17	18	19	20	21
S	U	I	stability	space	sign	mass	space	unit			CR	LF

Example:

S U I CR LF – computer command
S U I ? _ - _ _ _ 5 8 . 2 3 7 _ k g _ CR LF - command executed and mass returned

27.4.10. Switch on continuous transmission in basic unit

Syntax: **C1 CR LF**

Possible answers:

C1_I CR LF - command comprehended but cannot be executed

C1_A CR LF - command comprehended and in progress
MASS FRAME - mass value in basic unit is returned

Frame format:

1	2	3	4	5	6	7-15	16	17	18	19	20	21
S	I	space	stability	space	sign	mass	space	unit			CR	LF

27.4.11. Switch off continuous transmission in basic unit

Syntax: **C0 CR LF**

Possible answers answers:

C0_I CR LF - command comprehended but cannot be executed

C0_A CR LF - command comprehended and executed

27.4.12. Switch on continuous transmission in current unit

Syntax: **CU1 CR LF**

Possible answers:

CU1_I CR LF - command comprehended but cannot be executed

CU1_A CR LF - command comprehended and in progress
MASS FRAME - mass value in current unit is returned

Frame format:

1	2	3	4	5	6	7-15	16	17	18	19	20	21
S	U	I	stability	space	sign	mass	space	unit			CR	LF

27.4.13. Switch off continuous transmission in current unit

Syntax: **CU0 CR LF**

Possible answers:

CU0_I CR LF - command comprehended but cannot be executed
CU0_A CR LF - command comprehended and executed

27.4.14. Set lower threshold

Syntax: **DH_XXXXX CR LF**, where: **XXXXX** – mass format

Possible answers:

DH_OK CR LF - command executed
ES CR LF - command not comprehended (wrong mass format)

27.4.15. Set upper threshold

Syntax: **UH_XXXXX CR LF**, where: **XXXXX** – mass format

Possible answers:

UH_OK CR LF - command executed
ES CR LF - command not comprehended (wrong mass format)

27.4.16. Read lower threshold

Syntax: **ODH CR LF**

Possible answers: **DH_MASA CR LF** - command executed

Frame format:

1	2	3	4-12	13	14	15	16	17	18	19
D	H	space	mass	space	unit			space	CR	LF

Mass - 9 characters justified to the right
Unit - 3 characters justified to the left

27.4.17. Read upper threshold

Syntax: **OUH CR LF**

Possible answers: **UH_MASA CR LF** - command executed

Frame format:

1	2	3	4-12	13	14	15	16	17	18	19
U	H	space	mass	space	unit			space	CR	LF

Mass - 9 characters justified to the right
Unit - 3 characters justified to the left

27.4.18. Send all implemented commands

Syntax: **PC CR LF**

Possible answers:

PC_A_"Z,T,S,SI,SIA,SU,SUI,C1,C0,CU1,CU0,DH,ODH,UH,OUH,OT,UT, PC" – command executed, the indicator have sent all the implemented commands.

27.5. Manual printouts / automatic printouts

Users can general manual or automatic printouts from the scale.

- Manual printouts can be performed after loading the pan and stabilizing indication by pressing **ENTER/PRINT**.
- Automatic printouts can be performed only after loading the pan and stabilizing indication.

Format frame:

1	2	3	4 -12	13	14	15	16	17	18
stability	space	sign	mass	space	unit			CR	LF

Stability character	[space] if stable [?] if not stable [^] if an indication over the range [v] if fan indication below the range
sign	[space] for positive values or [-] for negative values
mass	9 characters justified to the right
unit	3 characters justified to the left
command	3 characters justified to the left

Example:

_ _ _ _ _ _ **1 8 3 2 . 0** _ **g** _ _ **CR LF –** the printout generated from the scale after pressing **ENTER/PRINT**.

28. COOPERATION WITH EXTERNAL DEVICES

HTY scales can cooperate with the following devices:

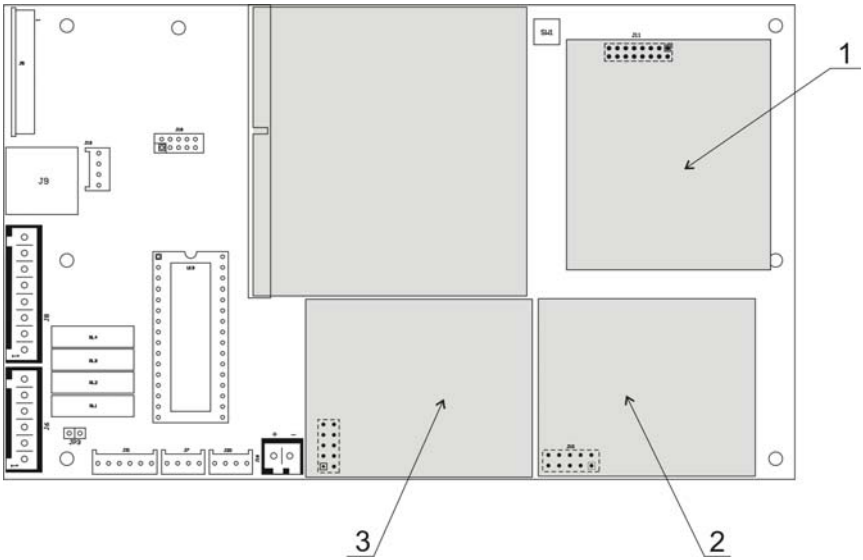
- Computers,
- Receipt printer - KAFKA, EPSON,
- Label printer - CITIZEN, ZEBRA,
- Transponder card reader - CK-01,
- Additional display in stainless steel casing - WD- 4/3,
- Large size display (2”) - WWG-2,
- Barcode scanner,
- External buttons PRINT, TARA, ZERO.

29. SPECIFICATION OF ADDITIONAL MODULES

Apart from standard interface, it is possible to equip terminals with additional module increasing functionality of devices:

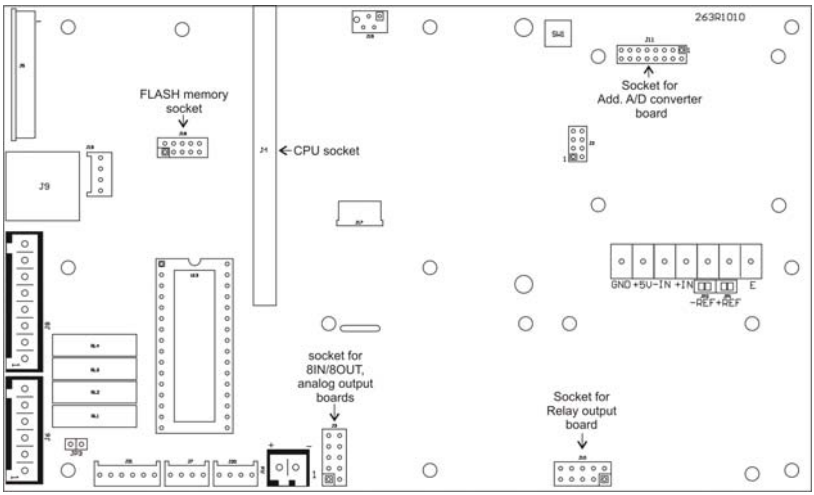
- **AN -** analogue outputs module,
- **PK 1 -** relay outputs module,
- **WE 8 -** 8 inputs / 8 outputs module,
- **DP-2** module for an additional platform.

Main board view with some additional modules being installed:



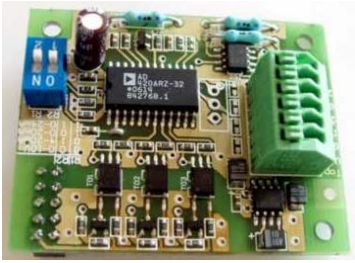
1 - additional A/D module,
2 - relay outputs module,
3 - analogue output module.

Main board view with connectors for additional modules:



J3 – WE 8 module
J3 – AN module
J10 – PK1 Relay module
J11 – DP2 module

29.1. Module of Analogue Outputs



Module of analogue outputs

Module accessible in three configurations:

- Voltage output **AN 0-10V**
- Current output **AN 4-20mA**
- Current output **AN 0-20mA**

29.1.1. Technical specification

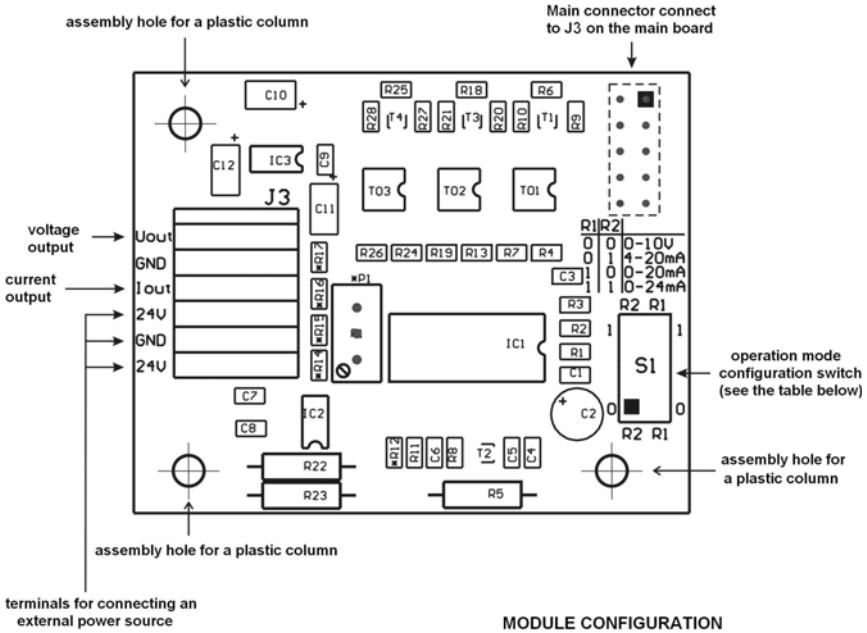
Work modes	4 - 20mA , 0 - 20mA, 0 - 10V
Resolution	16 bit
Current output resistance	<500Ω
Voltage output resistance	>400Ω
Power supply	24V DC (12 - 30V DC) max 40mA

29.1.2. The way of installing inside PUE HY

These modules are intended to mount inside PUE HY. They need to be connected to the 10-pin **J3** connector. For all configurations of **AN**, there is a gland installed on the back wall of the housing. A 3-meter shielded cables are led out via the gland. Wires should be free from insulation.

Installation procedure:

1. Unplug the scale from mains;
2. Unscrew and take off the back wall of the housing;
3. Install your module in **J3** on the main board;
4. During installation turn your attention to plastic columns. They should be placed one side in mounting holes in the main board and the other side in the mounted module;
5. Led the **PT0015** cable through one of the free glands;
6. Connect the **PT0015** cable to **J3** on the analogue module according to the description below;
7. Connect the **PT0015** cable shield to the housing (screwed terminator, 4mm diameter);
8. Screw down the back wall.



MODULE CONFIGURATION

ANALOGUE OUTPUTS' MODULE CURRENT LOOP 4-20 mA SET AS DEFAULT

R1	R2	Operation mode
0	0	0-10V
0	1	4-20mA
1	0	0-20mA
1	1	0-24mA

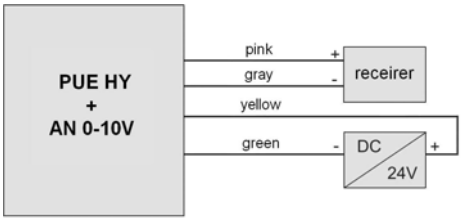
*Mounting of **AN** module on the main board of PUE HY*

29.1.3. Configuration of work modes of analogue modules

A work mode of analogue modules can be set using **S1** switch according to the drawings above (table „*configuration of analogue modules* "). Near the **S1** switch on the PCB you can find a description.

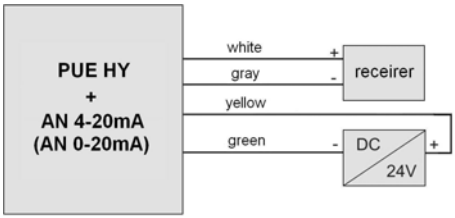
29.1.4. Connections to AN module

Drawing of connections of voltage output:



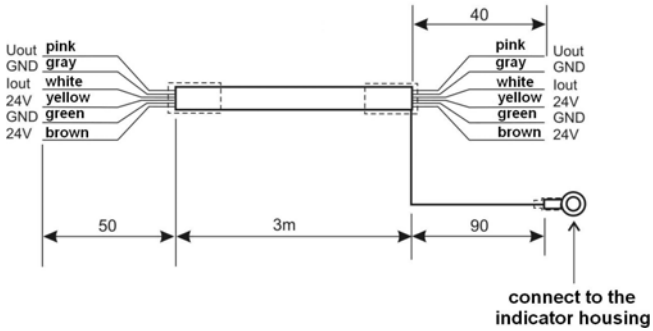
COLOURS OF WIRES	
Colour	**Signal**
Pink	U_{OUT} +
Gray	GND
Yellow	+24V DC
Green	GND

Drawing of connections of current loop:



COLOURS OF WIRES	
Colour	**Signal**
White	I_{OUT} +
Gray	GND
Yellow	+24V DC
Green	GND

PT0015
Analogue outputs' cable



Cable for analogue output

29.2. Relay module - PK1

Relay module PCB - PK1

This is an alternative solution for reed relay outputs present on the main board in the standard solution. The usage of this module excludes the usage of standard reed relay outputs. The advantage of using this module are the electrical parameters of contacts. All outputs can be freely configured (from the level of parameters). The cable is led out via a gland on the back wall of the housing (3m length).

Caution:
PK1 *modules constitutes an alternative solution for reed relays present on board. Using this module disables reed relays' outputs.*

29.2.1. Technical specification

Quantity of relays	4
Wire diameter	0,14 ÷ 0,5mm^2
Current-carrying capacity of contacts	230V AC - 2A, 30V DC - 2A

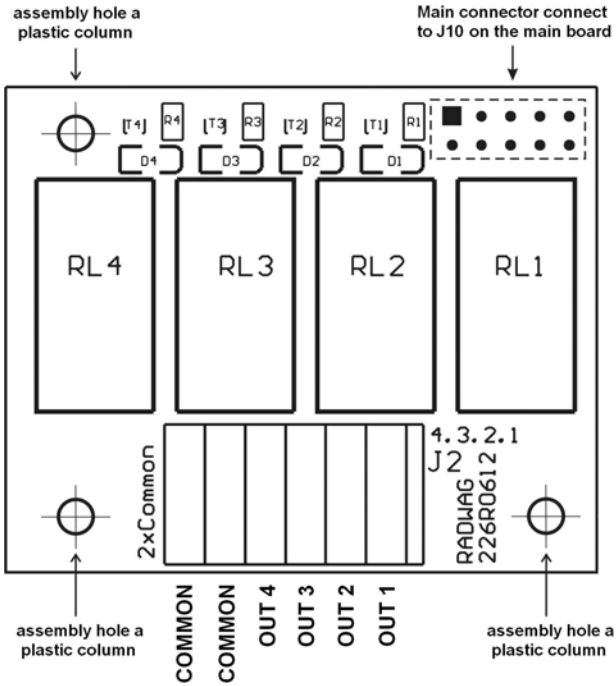
Caution:
When inductive load it is advisable to use a suppression circuit (LC or voltage-dependent resistors) installed next to the receptor. Parameters of these circuits are determined by clients.

29.2.2. Installing in PUE HY indicators

These module are intended to mount inside PUE HY indicators. It is mounted to the main board to the 10-pin **J10** connector. An additional gland is installed on the back wall and a 3m cable is led out through it Wires should be free from insulation.

Installing procedure:

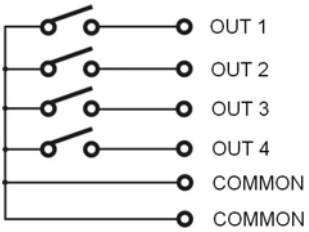
1. Unplug the scale from mains;
2. Unscrew and take off the back wall of the housing;
3. Install your module in **J10** on the main board;
4. During installation turn your attention to plastic columns. They should be placed one side in mounting holes in the main board and the other side in the mounted module PK1;
5. Led the **PT0016** cable through one of plugged glands;
6. Connect the **PT0016** cable to **J2** connector on the PCB according to the description below;
7. Screw down the back wall.



Installing a PK1 module on the main board of PUE HY

29.2.3. Drawing of cables and outputs

Relay outputs diagram:



SIGNALS AND DESIGNATIONS OF CONDUCTORS	
Wire number	**Description**
1	OUT 1
2	OUT 2
3	OUT 3
4	OUT 4
5 (yellow - green)	Common

29.3. WE 4 - 4 inputs / 4 outputs module

WE 4 module comprises 4 optoinsulated inputs and 4 optoinsulated outputs of reed relays. The input / output wires are led out via a gland on the back wall of the housing (3m length).

Caution:
As standard indicator is equipped with 3 in and 3 out sockets.

29.3.1. Technical specification

Parameters of outputs	
Quantity of outputs	4
Type of outputs	Reed operation contacts
Wire diameter	0,14 - 0,5mm^2
Maximal load-current contact capacity	0,2A DC
Maximal forward voltage	50V DC
Parameters of inputs	
Quantity of inputs	4
Input type	Optoinsulated
Wire diameter	0,14 – 0,5mm^2
Control voltage range	5 -24V DC

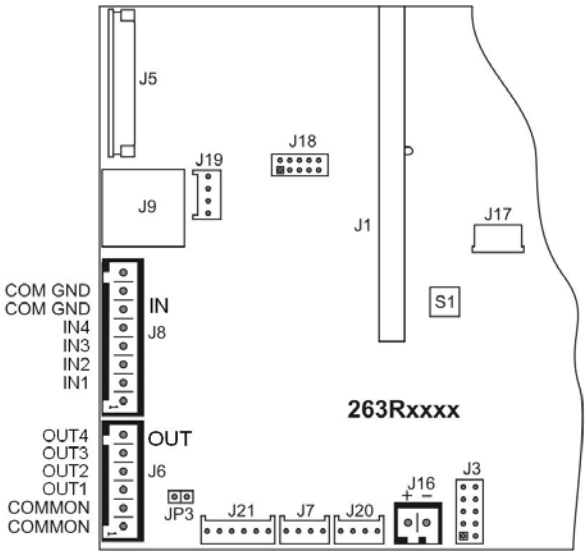
29.3.2. Colours of cables for I/O

INPUTS		OUTPUTS	
wire number	**description**	**wire number**	**description**
1	IN 1	6	OUT 1
2	IN 2	7	OUT 2
3	IN 3	8	OUT 3
4	IN 4	9	OUT 4
5	COM GND	10 (yellow - green)	COMMON

29.3.3. Installing method in PUE HY indicators

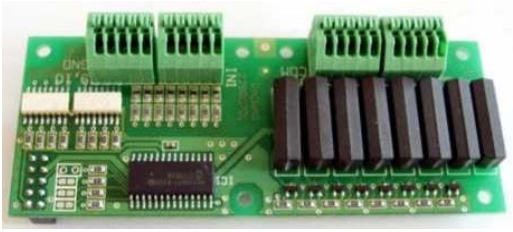
Installing procedure:

1. Unplug the scale from mains;
2. Unscrew and take off the back wall of the housing;
3. Dismount I/O socket and install a gland instead. LED the **PT0016** cable through it;
4. Connect the **PT0016** cable to the **J8** connector for inputs or to the **J6** for outputs, on the main board of PUE HY;
5. Screw down the back wall.



Installing WE4 modules on the main board of PUE HY

29.4. WE 8 - 8 inputs / 8 outputs module



8 inputs / 8 outputs PCB - WE 8

WE 8 modules can be connected as an alternative to the module of analogue output and relay module. Its task is to expand the functionality of an indicator for 8 inputs and 8 outputs freely configurable. It expands functionality of terminals. It comprises on board optoinsulated inputs and outputs freely configurable from the level of indicator.

Caution:
*If **WE 8** module is installed in it does not allow to install **AN** analogue output module and/or **PK 1** module of relays*.

29.4.1. Technical specification

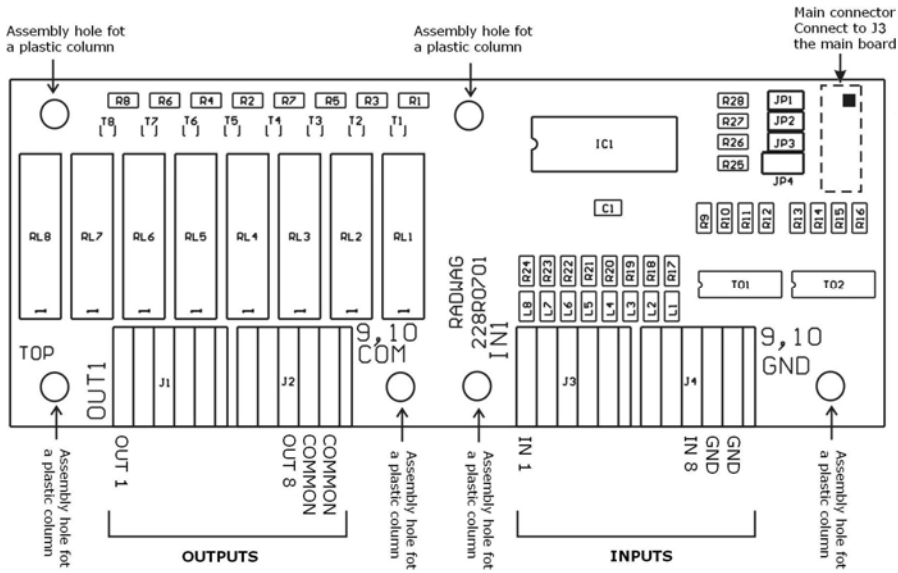
Parameters of outputs	
Quantity of outputs	8
Type of outputs	Reed operation contacts
Wire diameter	0,14 - 0,5mm^2
Maximal load-current contact capacity	0,2A DC
Maximal forward voltage	50V DC
Parameters of inputs	
Quantity of inputs	8
Input type	Optoinsulated
Wire diameter	0,14 – 0,5mm^2
Control voltage range	5 -24V DC

29.4.2. Installing method in PUE HY indicators

Module is designated for assembly inside indicator PUE HY. Module is assembled to main board of indicator to 10-pin **J3** connector. For module WE8, there are installed two additional glands on the back wall of the housing for leasing out 3m cables with insulation removed from wires' endings.

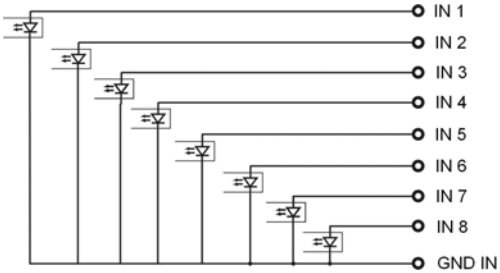
Installing procedure:

1. Unplug the indicator (remove the plug from socket 230V);
2. Unscrew the casing lid (back part of indicator casing);
3. Install the module in connector **J3** on main board;
4. While installing module pay attention to plastic posts fastening to main board. They should be placed in assembly holes in main board and in assembly holes in module WE 8,
5. Led cable PT0166 through gland M20,
6. Connect the cable IN/OUT to joint **J1**, **J2** for outputs and **J3**, **J4** for inputs on module 8IN/8OUT according to description given in table;
7. Assembly cover of indicator casing.

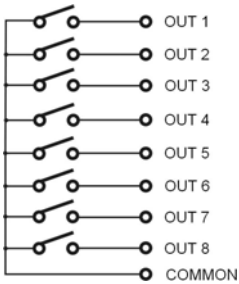


A WE 8 module placement on the main board of PUE HY

29.4.3. I/O diagram



WE8 inputs diagram



WE8 outputs diagram

29.4.4. Description of input output wires

Signals led out with two cables18x0,5mm^2 with numbered conductors.

INPUTS		OUTPUTS	
Wire number	**description**	**Wire number**	**description**
1	IN 1	10	OUT1
2	IN 2	11	OUT2
3	IN 3	12	OUT3
4	IN 4	13	OUT4
5	IN 5	14	OUT5
6	IN 6	15	OUT6
7	IN 7	16	OUT7
8	IN 8	17	OUT8
9	GND IN	18	COMMON

29.5. DP2 – module for an additional platform

DP2 PCB

DP2 modules increase functionality of PUE HY indicators by possibility of adding an additional platforms. It is intended to mount inside the indicator. DP2 modules require an additional gland to led in the platform cable.

29.5.1. Technical specification

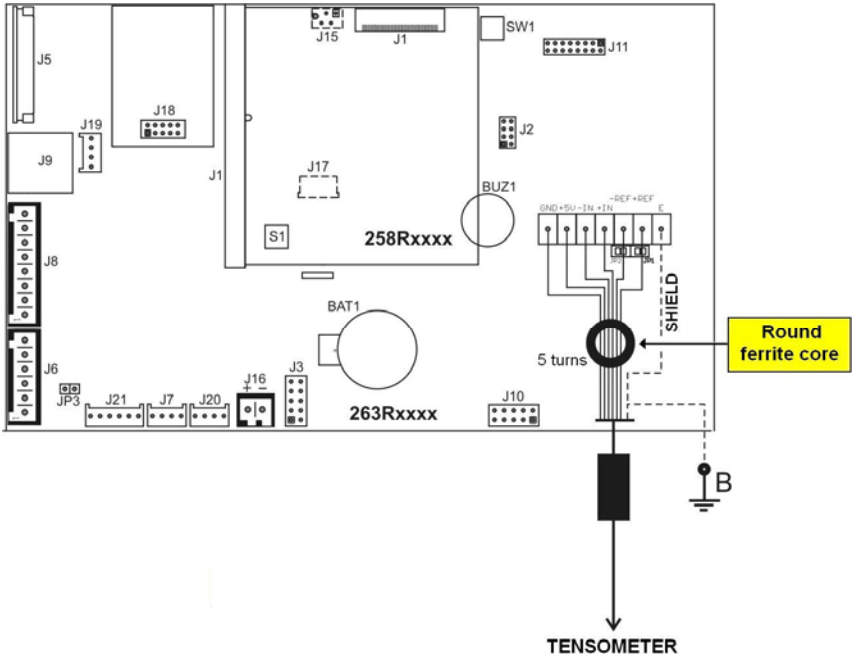
Operation Temperature	-10°C ÷ 40°C
OIML class	III
Number of verification divisions	6 000
Maximal change of input signal	19mV
Maximal voltage per verification divisions	3,25 µV
Minimal voltage per verification divisions	0,5µV
Minimal tensometer impedance	80Ω
Maximal tensometer impedance	1200Ω
Tensometer excitation voltage	5V
Types of tensometers	4 or 6 wires + shield
Number of platform	Max. 4
Multi range possibility	YES

29.5.2. Colours of wires

RADWAG Designation	Colour	Designation of soldering pads on PCB's.
+INPUT	brown	+ 5V
-INPUT	green	AGND
+OUTPUT	yellow	+ IN
- OUTPUT	white	- IN
+SENSE	grey	+ REF
- SENSE	pink	- REF
EKRAN	yellow-green	(according to the rule of connecting shields)

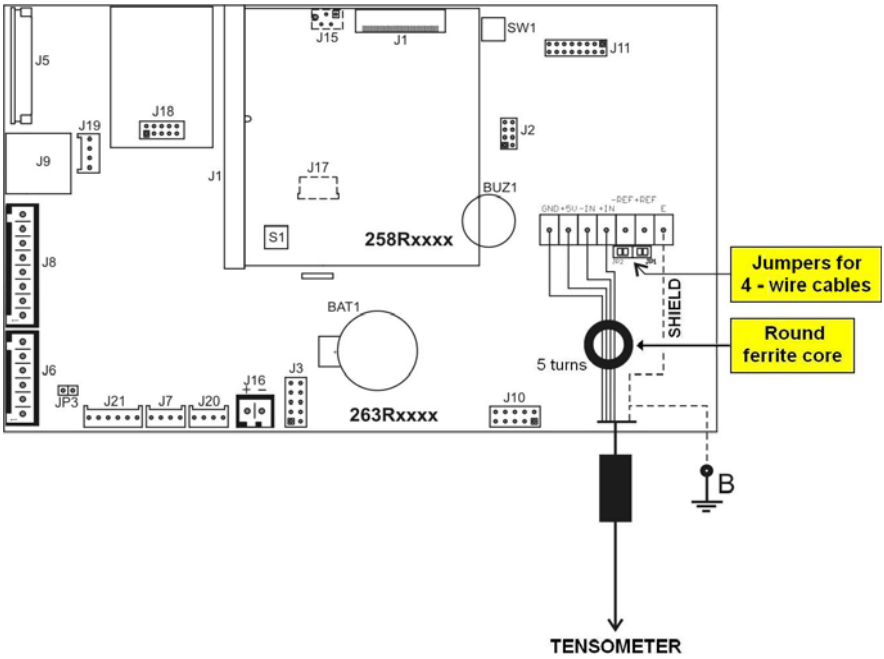
29.5.3. Connecting additional platforms

Connecting 6-wire tensometers



Radwag A/D converter PCB	Signals description in tensometers	REMARKS
E	SHIELD	
REF+	SENSE +	JP1 not soldered
REF-	SENSE -	JP2 not soldered
IN+	OUTPUT+	
IN-	OUTPUT-	
+5V	INPUT+	
AGND	INPUT-	

Connecting 4-wire tensometers



Radwag A/D converter PCB	Signals description in tensometers	REMARKS
E	SHIELD	
REF+	-	solder jumper JP1
REF-	-	solder jumper JP2
IN+	OUTPUT+	
IN-	OUTPUT-	
+5V	INPUT+	
AGND	INPUT-	

The rules of connecting shields from tensometer cable

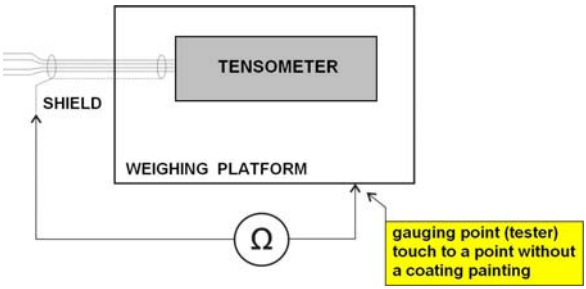
For assuring appropriate operation use the description below to connect the shield of the tensometer properly. In both cases (6- and 4-wire cables) the same way rule are valid:

	platforms connected to indicators in metal housing via a cable only	platforms electrically connected to indicators' metal housings e.g. pillars, racks
Load cells without internal shield connection to the tensometer body	**POINT B**	**E**
Load cells with internal shield connection to the tensometer body	**POINT B**	**POINT B**

Point B – screwed terminal electrically connected to the metal housing of the indicator (possible using of soldering eye).
E – soldering pad on a **DP2** PCB.

The way of checking connection between the shield and the tensometer body

Use an ohmmeter for this purpose.



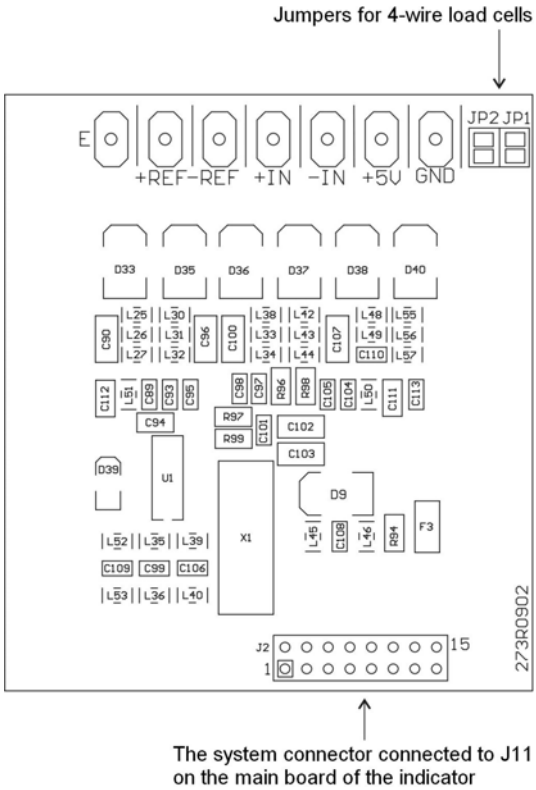
29.5.4. Installing in PUE HY housing

DP2 modules are intended to mount inside PUE HY housings. It is mounted to the main board to the 10-pin **J11** connector. For **DP2** module an additional gland is installed on the back wall of the housing.

Installing procedure:

1. Unplug the scale from mains;
2. Unscrew and take off the back wall of the housing;

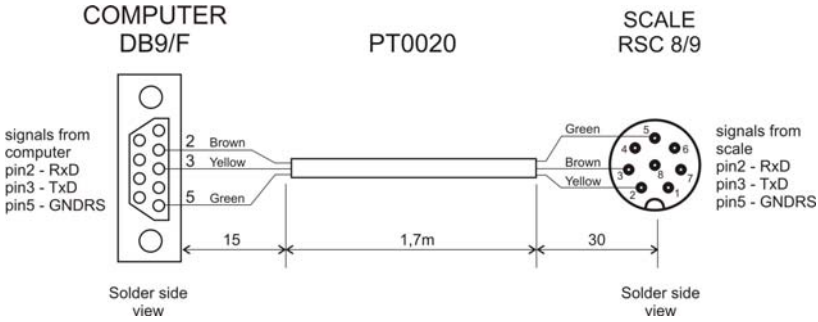
3. Install your module in **J11** on the main board:



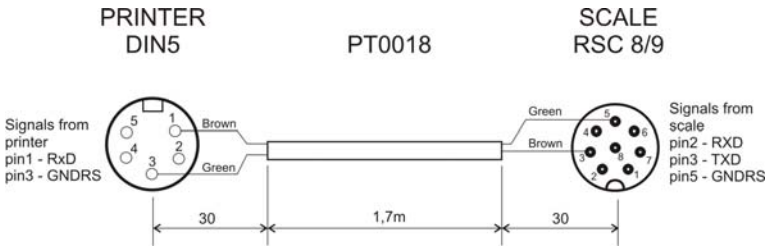
Installing DP2 module on the main board of PUE HY

4. During installation turn your attention to plastic columns. They should be placed one side in mounting holes in the main board and the other side in the mounted module **DP2**;
5. Led a tensometer cable through the gland next to the gland of main platform;
6. Put on a ferrite core on the cable (core of appropriate internal diameter);
7. Turn the wires on the ferrite core (5 turns);
8. The wires of signal cable from the load cell connect to the therminals on module DP2;
9. Fasten the cable to the housing using a band clip (to the screwed terminal on the back wall of the housing);
10. Screw down the back wall.

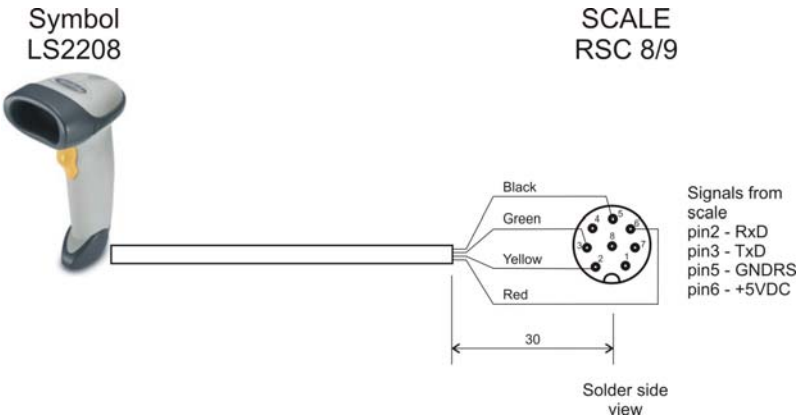
30. DIAGRAMS OF CONNECTION CABLES



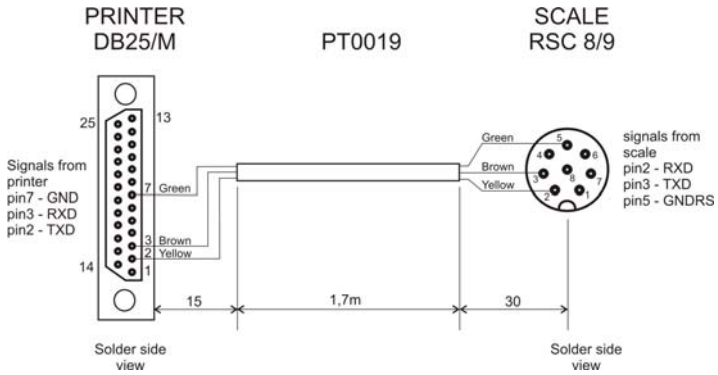
Indicator – computer cable



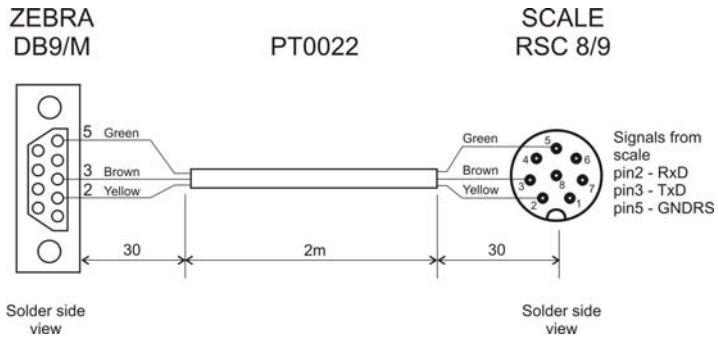
Indicator – KAFKA printer cable



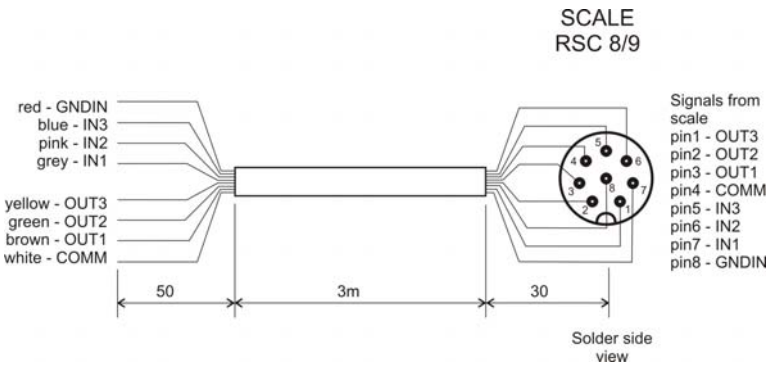
Indicator – barcode scanner (LS2208) cable



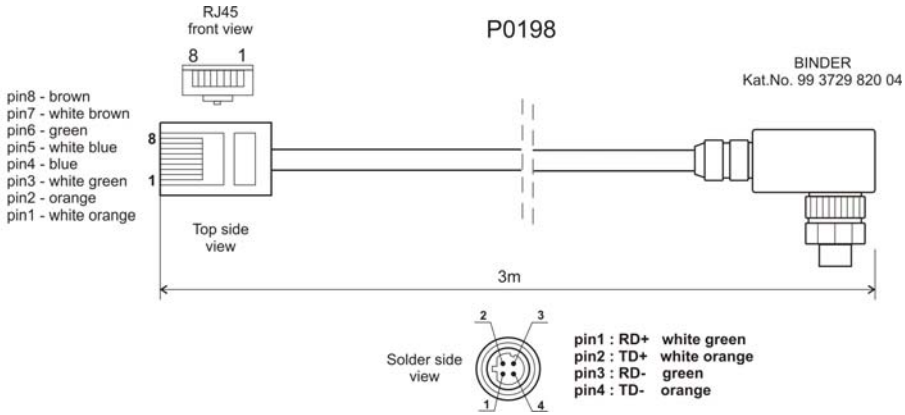
Indicator – printer (CITIZEN, EPSON) cable



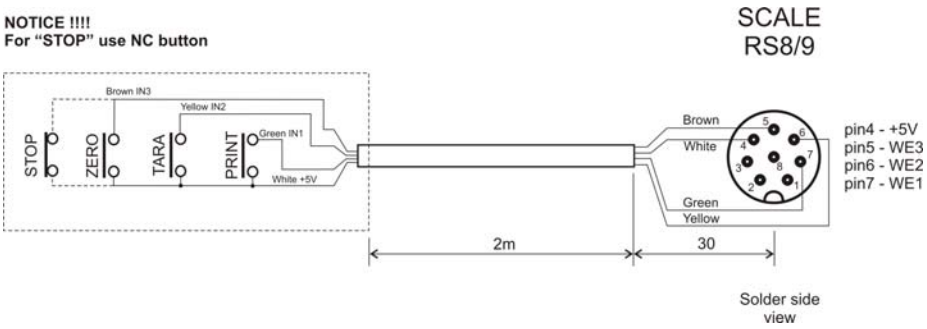
Indicator – ZEBRA printer cable



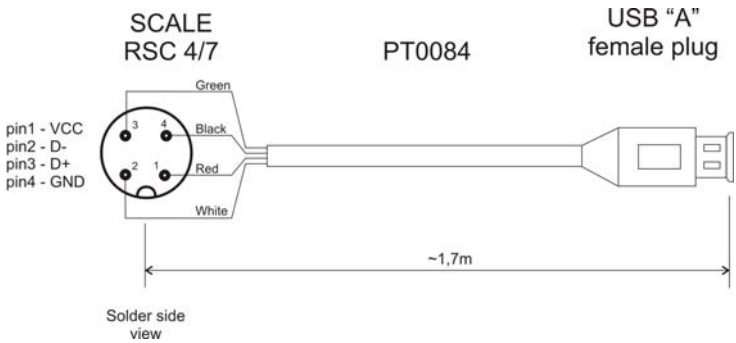
Indicator – I/O cable



Indicator – Ethernet (P0198) cable



PRINT, TARA, ZERO external buttons cable



USB cable (adapter)

31. TECHNICAL PARAMETERS

	PUE HY
Housing	stainless steel
Display	5,7” with resistive touch panel
Power Supply	100-240VAC 50-60Hz
Optional power supply	External 10-24VDC 2A
Operation Temperature	-10°C to 40°C
OIML class	III
Number of verification intervals	6000
Max. change of input signal	19.5mV
Max. Voltage per verification interval	3.25µV
Min. Voltage per verification division	0.5µV
Min. impedance of tensometer	80 Ω
Max. impedance of tensometer	1200 Ω
Tensometer excitation voltage	5V
Load cell connectivity	4 or 6 wires + shield
Number of platform	Max. 4
RS232	Standard
USB	Standard
Ethernet	Standard
3IN/3OUT (inputs/outputs)	Standard
Multi-range possibility	yes

32. ERROR MESSAGES

Err2 - Value beyond the zero range,

Err3 - Value beyond the tare range,

Err8 - Tarring / zeroing operation time exceeded,

NULL - Zero value from the AD converter,

FULL - Measurement range overflow,

HI Display range overflow,

LH - Start mass error, the mass on the weighing platform is beyond the acceptable range (-5% to +15% of start mass)

33. APPENDIX A – Variables for printouts

33.1. Inventory of variables

Notice:
Every variable needs to be included in brace brackets e.g. {x}, where x – variable number.

A list of variables accessible in the system for defining printout patterns and data displayed in the workspace of scale's screen:

Symbol	Description
{0} [1)]	Standard printout in calibration unit
{1} [1)]	Standard printout in current unit
{2}	Date
{3}	Time
{4}	Date & Time
{6}	Net mass in current unit
{7}	Net mass in calibration unit
{8}	Gross mass
{9}	Tare
{10}	Current unit
{11}	Calibration unit
{12}	Minimum threshold
{13}	Maximum threshold
{14}	Batch number
{15}	Cumulative Statistics: Number
{16}	Cumulative Statistics: Sum
{17}	Cumulative Statistics: Average
{18}	Cumulative Statistics: Minimum
{19}	Cumulative Statistics: Maximum
{20}	Cumulative of Cumulative Statistics: Quantity
{21}	Cumulative of Cumulative Statistics: Sum
{22}	Cumulative of Cumulative Statistics: Average
{23}	Cumulative of Cumulative Statistics: Minimum
{24}	Cumulative of Cumulative Statistics: Maximum

{25}	Mass: lb
{26}	Checkweighing
{27}	Value to pay
{28}	C Value (cumulative amount to pay)
{29}	CC value (cumulative of cumulatives amount to pay)
{30}	Gross (amount to pay + VAT)
{31}	Platform number
{32}	Factory Number
{33}	Scale division
{34}	Range
{35}	Counting pieces: Sample weight
{36}	Deviations: Sample weight
{37}	Statistics: Standard deviation
{38}	CC Statistics: Standard deviation
{39} [2)]	Universal variable
{50}	Product: Name
{51}	Product: Code
{52}	Product: EAN Code
{53}	Product: Mass
{54}	Product: Tare
{55}	Product: Unit price
{56}	Product: Minimum
{57}	Product: Maximum
{58} [3)]	Product: Testing Prepackages mode (CPG)
{59}	Product: Number of validity days
{60}	Product: VAT
{61}	Product: Date
{62}	Product: Expiry Date
{63} [3)]	Product: Density
{64} [4)]	Product: Ingredients
{65}	Product: Description

{75}	Operator: Name
{76}	Operator: Code
{77}	Operator: Access level
{80}	Package: Name
{81}	Package: Code
{82}	Package: Mass
{85}	Contractor: Name
{86}	Contractor: Code
{87}	Contractor: Tax ID
{88}	Contractor: Address
{89}	Contractor: Postal code
{90}	Contractor: City
{91}	Contractor: Discount
{100} [3)]	CPG Report: Batch Number
{101} [3)]	CPG Report: Start date
{102} [3)]	CPG Report: End date
{103} [3)]	CPG Report: Result
{104} [3)]	CPG Report: Batch quantity
{105} [3)]	CPG Report: Number of Measurements
{106} [3)]	CPG Report: T1 error border
{107} [3)]	CPG Report: 2T1 error border
{108} [3)]	CPG Report: Number of T1 errors
{109} [3)]	CPG Report: Acceptable number of T1 errors
{110} [3)]	CPG Report: Number of 2T1 errors
{111} [3)]	CPG Report: Total
{112} [3)]	CPG Report: Min
{113} [3)]	CPG Report: Max
{114} [3)]	CPG Report: Average
{115} [3)]	CPG Report: Limit of the average
{116} [3)]	CPG Report: Standard deviation
{117} [3)]	CPG Report: Measurements

{118} [3)]	CPG Report: Unit
{119} [3)]	CPG Report: Report Number
{120} [3)]	Average Tare Report: Date
{121} [3)]	Average Tare Report: Result
{122} [3)]	Average Tare Report: Standard deviation
{123} [3)]	Average Tare Report: 0.25T1
{124} [3)]	Average Tare Report: Number of Measurements
{125} [3)]	Average Tare Report: Measurements
{126} [3)]	Average Tare Report: Report Number
{130}	Source Warehouse: Name
{131}	Source Warehouse: Code
{132}	Source Warehouse: Description
{135}	Target Warehouse: Name
{136}	Target Warehouse: Code
{137}	Target Warehouse: Description
{140}	Net mass in calibration unit: Total
{141}	Additional display: WD
{142}	Additional display: WWG
{143}	Hex
{144}	Hex UTF8
{145}	Partial mass
{146}	Gross mass in current unit
{147}	Tare in current unit

Notice:

1) *Variables {0} and {1} is terminated by CR LF, i.e. the cursor is moved to the beginning of the next line by default,*

2) *In case of variable {39}, each position from the database (1,2-n) is formated as follows: Position 1 - {39:1}, Position 2 - {39:2}, etc.*

3) *Variables not related to **„Standard software”**,*

4) *In case of variable {64}, each line (L1-Ln) is formatted according to the pattern: Line 1 - {64:L1}, Line 2 - {64:L2}, etc.*

33.2. Formatting variables

Users can format numeric, text and date variables intended for displaying or printing out.

Different format commands:

- Justification to the left,
- Justification to the right,
- Setting the number of characters for printout / display,
- Declaration of the number of digital places for numeric variables,
- Date&Time formatting,
- Formatting numeric variables for EAN13 codes,
- Formatting numeric variables and dates for EAN128/GS1-128 codes.

Format characters:

Character	Description	Example
,	Separates veriables from format strings	**{7,10}** – Net mass in calibration unit situated in 10-character string justified to the right.
-	Minus sign or justification to the left	**{7,-10}** - Net mass in calibration unit situated in 10-character string justified to the left
:	Precides formatting or sepatates hours, minutes and seconds	**{7:0.000}** - Net mass in calibration unit always with three decimal places ; **{3:hh:mm:ss}** – Present time in the format : hours : minutes : seconds
.	The first dot in the format string determines the location of the decimal separator in the formatted value; any additional dot characters are ignored.	**{55:0.00}** – Unit price always with two decimal places; **{17:0.0000}** – Average value form weighings with four decimal places;
F	The number is converted to a string of the form "-ddd.ddd…" where each 'd' indicates a digit (0-9). The string starts with a minus sign if the number is negative.	**{7:F2}** - Net mass in calibration unit always with two decimal places. **{7,9:F2}** - Net mass in calibration unit always with two decimal places in 9-character string justified to the right.
V	Formatting mass and derivatives for EAN13 codes	**{7:V6.3}** - Net mass for EAN13 (6-character code) with three decimal characters
T	Formatowanie masy i wielkości pochodnych do masy w kodzie EAN128	**{7:T6.3}** – Net mass for EAN128/GS1-128 with two decimal places.

/	Date separator between days, months and years	**{2:yy/MM/dd}** – Present date formatted as: year - month - day, where **yy** represents two less significant digits of year.
****	„Escape" character removing formatting function form next character to allow it to be used as a character in a text string.	**{2:yy\/MM\/dd}** – Present date formatted as yesr / month / day; **{2:yy\:MM\:dd}** –Present date formatted as: year : month : day. In case of necessity of using **„\"** as literal it should be preceded by another escape characterj "\\".

Format examples:

Symbol	Description
{7:V6.3}	Net mass for EAN 13 (6-character code)
{7:V7.3}	Net mass for EAN 13 (7-character code)
{27:V6.3}	Net amount to pay for EAN 13 (6-character code)
{27:V7.3}	Net amount to pay for EAN 13 (7-character code)
{7:T6.3}	Net mass for EAN 128/GS1-128
{16:T6.3}	Cumulative net mass for EAN 128/GS1-128
{21:T6.3}	Cumulative of cumulative net mass for EAN 128/GS1-128
{25:T6.3}	Net mass in lb for EAN 128/GS1-128
{8:T6.3}	Gross mass for EAN 128/GS1-128
{55:T6}	Product price for EAN 128/GS1-128
{2:yyMMdd}	Date for EAN 128/GS1-128
{61:yyMMdd}	Product date for EAN 128/GS1-128
{62:yyMMdd}	Expiary date for EAN 128/GS1-128
{16:V6.3}	Cumulative net mass for EAN 13 (6-character code)
{16:V7.3}	Cumulative net mass for EAN 13 (7-character code)
{28:V6.3}	Total/cumulative amount to pay for EAN 13 (6-character code)
{16:V7.3}	Total/cumulative amount to pay for EAN 13 (7-character code)
{21:V6.3}	Cumulative of cumulative net mass EAN 13 (6-character code)
{21:V7.3}	Cumulative of cumulative net mass EAN 13 (7-character code)
{29:V6.3}	Total/cumulative of cumulative amount to pay EAN 13 (6-character code)
{29:V7.3}	Total/cumulative of cumulative amount to pay EAN 13 (7-character code)

34. APPENDIX B – Functions of programmable buttons

Icon	Function name
	Print
	Zero
	Tare
	Enter tare
	Parameters
	Local Parameters
	Set MIN and MAX
	Statistics (cumulative) : Print and zero
	Statistics (cumulative) : Print
	Statistics (cumulative) : zero
	Statistics (cumulative of cumulative) : Print and zero
	Statistics (cumulative of cumulative) : Print

	Statistics (cumulative of cumulative) : zero
	Edit batch number
	Start
	Stop
	Choose an operator
	Choose an operator by name
	Choose an operator by code
	Choose a product
	Choose a product by name
	Choose a product by code
	Choose a package
	Choose a package by name
	Choose a package by code

	Choose a contractor
	Choose a contractor by name
	Choose a contractor by code
	Choose a source warehouse
	Choose a source warehouse by name
	Choose a source warehouse by code
	Choose a target warehouse
	Choose a target warehouse by name
	Choose a target warehouse by code
	Change working mode
	Counting pieces: Specify piece mass
	Counting pieces: Estimate piece mass
	Counting pieces: Ascribe standard

	Deviations: Specify sample mass
	Deviations: Estimate sample mass
	Emergency stop
	Chute permission
	Disable tare
	Restore tare
	Change unit
	Change platform
	Edit universal variable 1
	Edit universal variable 2
	Edit universal variable 3
	Edit universal variable 4
	Edit universal variable 5

35. APPENDIX C – Label pattern

A label pattern can be created in 2 ways:

- From the terminal level using variables,
- Using PC software **EDYTOR ETYKIET R01**. A created project needs to be saved as an **„lb”** file then copied on a pendrive that can be connected to the terminal. Finally transfer the file to the database in the scale.

While a label is in the database of labels it can be ascribed to products or/and contractors in order to work in labelling mode.

35.1. Designing a label from the terminal level

Procedure:

- Enter < **Databases>** according to ch. 26 of this manual,
- Enter < **Labels>** and press on the required position.
- After entering < **Label pattern>** an editing field with the screen keyboard appears
- Modify the existing pattern using the list of variables accessible after pressing ,
- Confirm changes by pressing .

Notice:

In the bottom line of the screen keyboard there are additional buttons that help to modify a label pattern:

Screen keyboard on / off

*Read label patterns from *.lb files (see – ch. 35.3)*

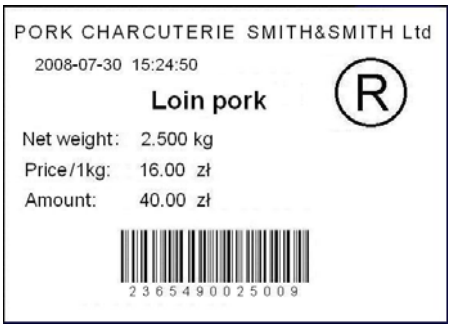
Select variables for the display pattern (inventory of variables can be found in APPENDIX A)

Clearing the editing field

35.2. Designing a label on a computer

Example:

Let us create a label pattern for the label below:

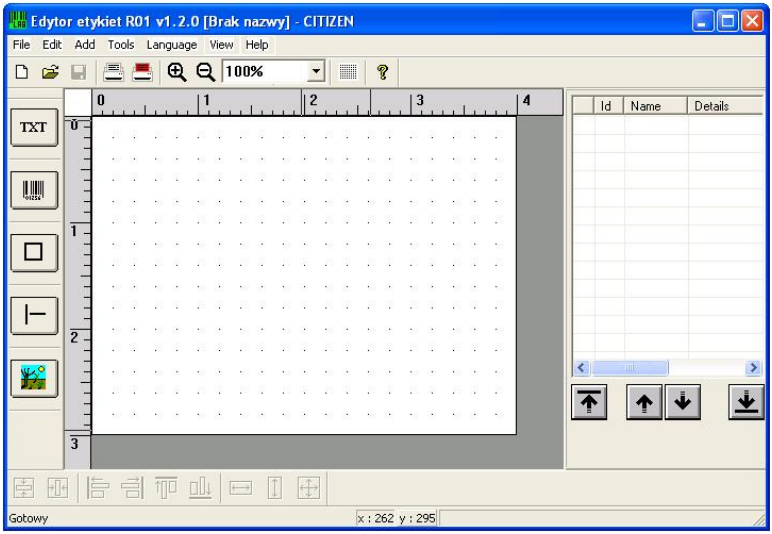


Notice:
*The installer of **EDYTOR ETYKIET R01** is accessible to download on website: **www.radwag.com.** on the overlap: Products / Measuring indicators / PUE7.*

Procedure:

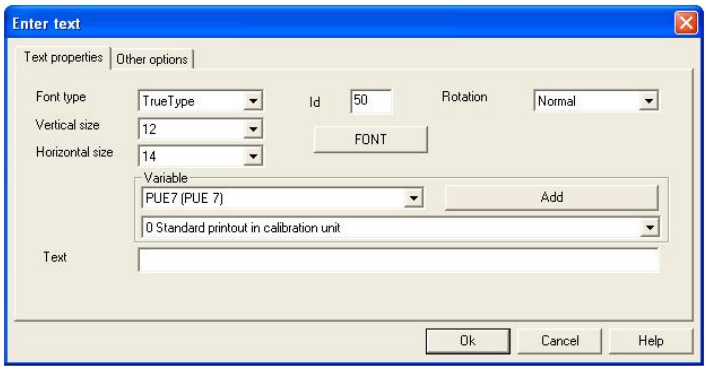
1. Run software **EDYTOR ETYKIET R01**,
2. The following window appears:

3. Select the type of printer to cooperate with the scale and press the key OK. Then main window of the software appears:



Notice:
Before starting the design process the label and printer parameters need to be set. The settings are described in the file: Help / Help / Program options / Settings.

4. To add a text in the label click on A. Then following window appears:

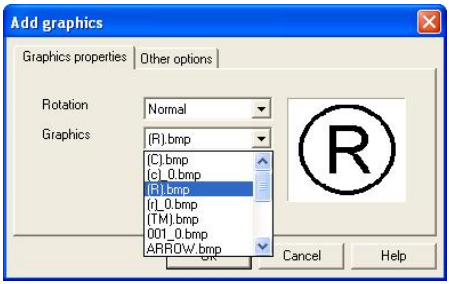


5. In **<Text>** write the text: PORK CHARCUTERIE SMITH&SMITH Ltd, and confirm with the key OK. Then put it in the appropriate place of the label.

6. Click on the key and in the field **<Text>** inscribe: **{4}** (date & time), confirm by pressing and place it in the right place,

7. Place other texts and variables on the label in the same way as the one shown above.

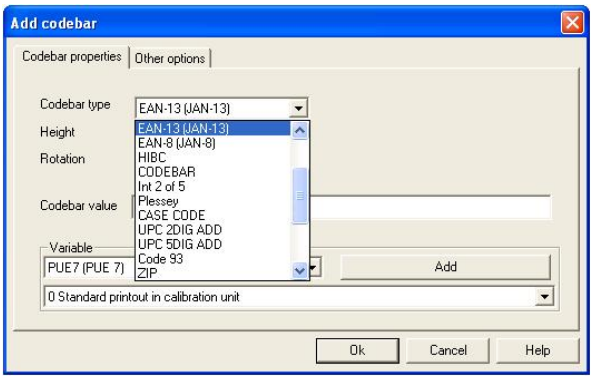
8. Click on and expand list **<Graphics>** in opened window **"Add graphics"**:



9. Selected the required **<*.bmp> file**, confirm it with and put the draft in the proper place of the label.

Notice:
<*.bmp> *on the label is printed after the draft is sent to printer memory. Description of how to send data to printer is presented in software menu in: Help / Help / Program options / Downloading to printer.*

10. Click on and expand list **<Codebar type>** in opened window **„Add codebar"** by selecting **<EAN-13 (JAN-13)>**:



11. In place **<Codebar value>** write variable: **{7:V6.3}** (net mass for EAN13, 6-character code with three decimal characters), confirm it by pressing

then place the code in the right place in the label.

12. Record the design of the label by selecting **<File>** in software menu and then **<Save as lb – UTF8…>**.

Notice:
*Recorded patterns of labels in files with ***.lb** extension are not editable. This is advisable to record designs of labels in files with ***.lab** extension as well (software menu: File / Save as…) to use/edit the designs of labels in the future.*

35.3. Saving label patterns in the scale

Procedure:

- A label pattern ***.lb** created in **EDYTOR ETYKIET R01** needs to be copied to a pendrive,
- Connect the pendrive to USB in the scale,
- Enter: **„** **Parameters /** **Databases /** **Labels”** and press the required item,
- Enter **<** **Label patterns>**, then an editing field and the screen keyboard appears,
- Press , to open a window showing files on the pendrive,
- Select the required ***.lb** file. It is automatically copied to the editing field,
- Confirm the changes by pressing .

Notice:

If a pendrive is not recognized by the system button *will remain inactive.*

35.4. Attributing a label to a product

Procedure:

- Enter **Databases>** according to ch. 26 of this manual,
- Enter **Products>** and press the required item.
- Enter **Label>**, then the database of labels is open with the list of all labels,
- Choose the required label. The program automatically ascribes the label to the product.

35.5. Attributing a label to a contractor

Procedure:

- Enter **Databases>** according to ch. 26 of this manual,
- Enter **Contractors>** and press the required item,
- Enter **Label>**, then the database of labels is open with the list of all labels,
- Choose the required label. The program automatically ascribes the label to the contractor.

35.6. Printing labels

Procedure:

- While in the main window choose a product (button F1) or a contractor (button F2) that has attributed a label,
- Place a load on the pan and wait for ◣◢ then press **ENTER/PRINT**,
- The label is printed on a printer connected to the scale.

Notice:

1. *Labels can be attributed to products or/and contractors. After pressing* **ENTER/PRINT** *a label is printed on a connected printer, provided a selected contractor or product has an ascribed label.*

2. *Users can perform the test label printout – see ch. 26.5 of this manual.*

36. APPENDIX D - CITIZEN printer setting

Baud rate	**: 9600b/sec**
Parity control	**: No**
Number of data bits	**: 8bit**
Number of stop bits	**: 1 bit**
Flow control	**: No**
IEEE 1284	**: ON**

Information printed by the printer via RS232:

[Interface Menu]	
RS-232C Baud rate	: **9600bps**
RS-232C Parity	: **None**
RS-232C Length	: **8 bit**
RS-232C Stop bit	: **1 bit**
RS-232C X-ON	: **No**
IEEE 1284	: **On**

The way of generating the setup printout and setting CITIZEN printers are described in manuals attached to printers or present on the website of the manufacturer.

37. APPENDIX E - ZEBRA printer setting

Baud rate – 9600b/sec
Parity control – none
No of data bits – 8bit
No of stop bits – 1 bit

Information printed by the printer via RS232:

Serial port : **96, N, 8, 1**

The way of generating the setup printout and setting ZEBRA (Eltron) printers are described in manuals attached to printers or present on the website of the manufacturer.

38. APPENDIX F - Communication with barcode scanners

1. For communication with barcode scanners RADWAG scales use RS232 interfaces and simplex transmission (one direction) without handshaking. Only two wires are required for assuring such a transmission. Used scanners should be equipped in such interface with disabled both hardware and software handshaking.
2. Both scales and scanners have the possibility of setting of transmission parameters. Both devices are required to have the same parameters set : baud rate, number of data bits, parity control, stop bits. e.g. 9600,8,N,1 – baud rate 9600 bit/s, data 8-bits, no parity control, 1 stop bit.
3. Barcode scanners can send additional information apart from the expected barcode e.g. symbology (type of barcode). It is advisable to disable such information because RADWAG devices and software do not use it.
4. Some RADWAG systems can omit unnecessary information by using parameters that mark the beginning and the length of the code required to analyse.
5. A special protocol is required in order the code be received by RADWAG equipment. It is required to program an appropriate *prefix and suffix*. Prefix – one byte 01 hexadecimally, suffix one byte 0D hexadecimally.
6. Most barcode scanners allow to enable/disable different symbologies (barcode types).
7. Programming of scanners is usually performed by reading special barcodes or by using an external software tool.
8. Scanners marketed together with RADWAG systems are always configured according to the rules above.

Barcode with required prefix and suffix in hexadecimal format	**Barcode without required –fixes in ASCII format**	**Code type**
01 30 30 32 31 30 31 32 36 0D	00210126	EAN-8
01 30 31 32 33 34 35 36 37 38 39 0D	0123456789	2 of 5
01 43 4F 44 45 20 33 39 20 54 45 53 54 0D	CODE 39 TEST	CODE 39
01 31 31 30 31 32 33 34 35 36 37 38 39 31 0D	1101234567891	EAN-13
01 43 6F 64 65 20 31 32 38 20 54 65 73 74 0D	CODE 128 Test	CODE 128

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